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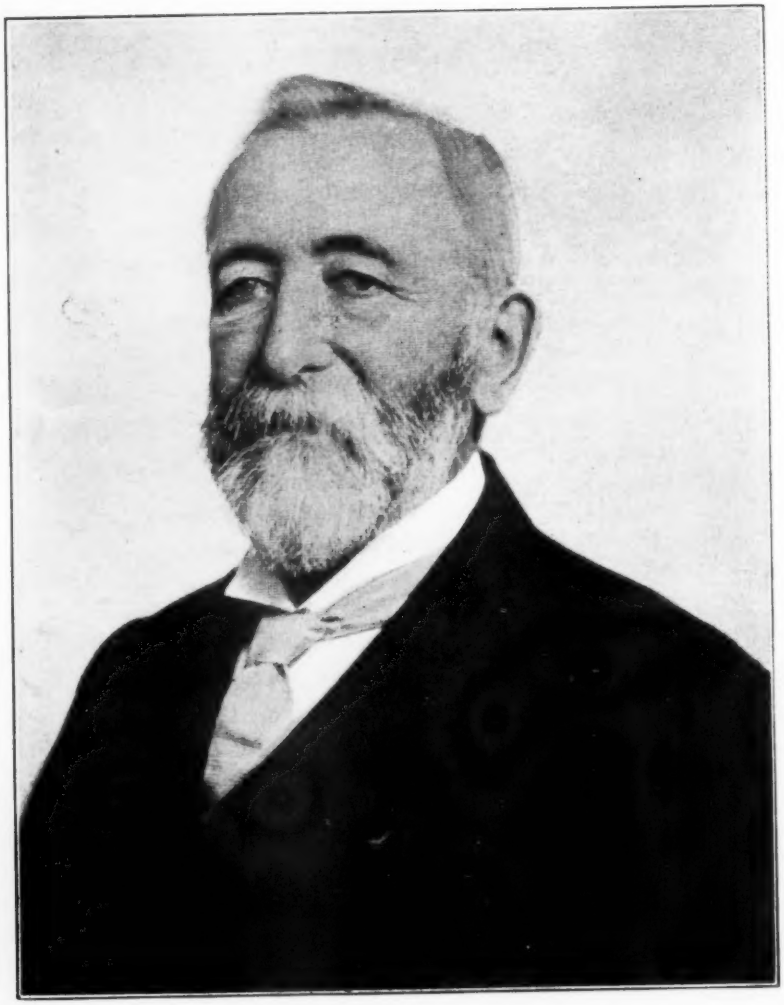

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HISTORY OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. SECOND DECADE—1860-1870.

WILLIAM C. ALPERS, SC. D.

The second decade of the American Pharmaceutical Association began under the most trying and discouraging conditions. The Civil War had rent our great country asunder and men who a year before parted as friends were now ready to fight each other on the bloody field of battle. Business was demoralized and the hearts of many, even the bravest, were filled with anguish and apprehension for the future.

The tenth annual meeting, which should have been held at St. Louis, was abandoned, but the following year in 1862, the old guard of the Association, mostly its founders, convened at Philadelphia, Henry T. Kiersted, of New York, presiding in the first part, and William Procter, Jr., of Philadelphia, in the second part of the meeting. In his address Mr. Kiersted says:

"Yet, discouraging as the prospect is, and crippled as we are in the compulsory absence of so many of our associates, your Executive Committee had determined that we should yield no longer to the blast. One annual meeting has been omitted; our duty to ourselves, to the profession, and to the community summons us once more to the work."

The attendance was naturally small, only twenty-four being present at the roll call, but these were joined by seventeen more in the course of the meeting. Many were the letters of regret from the friends of Pharmacy, some being unable to attend owing to heavy loss through the inclemency of the times, others having been deprived of their sons and assistants on account of the War, and some had gone themselves to offer their lives for their country.

There was a spirit of sadness and gloom over this meeting, for timid hearts feared that it might be the last of the Association. Many other associations had disbanded, social, scientific and commercial ones, owing to the severity of the times

and it speaks well for the determined spirit of the founders of the Pharmaceutical Association that, in spite of all the gloomy surroundings, they found time and courage to assemble. Another trait that was observable was that no word of complaint was uttered against those who had formerly met with them. It was President Kiersted who, two years ago, had expressed the hope that the threatening clouds might pass by. Now he mentions the fact, "that many of ourselves should soon be personally enrolled in vast hostile armaments, whose every movement should carry death and desolation into regions then smiling with plenty and happy in peace; that the arcana of our own science, consecrated, as it is, to the cause of humanity and to the preservation of health and life should soon be explored to furnish some means of destruction hitherto unknown to the art of war." And from the report of the Executive Committee, the following quotation might be made:

"Joseph Laidley, it will be remembered, attended our last meeting at New York, and was one of the very few Southern members there present. Mr. Laidley was of Irish descent, and was educated in Philadelphia, where he resided until he attained his majority. Having graduated at the College of Pharmacy in Philadelphia in 1850, he soon afterwards moved to Richmond, Va., where he continued to reside until his death in May, 1861, which occurred in a shocking manner, from the premature explosion of a quantity of fulminating mercury, in the preparation of which he voluntarily engaged for the Confederate authorities. Mr. Laidley was formerly an active member of this Association and in 1854-5, was one of its Vice-Presidents. As a pharmaceutist he was able and energetic and has left on record several papers and essays."

You will see that there was no harsh criticism, no sign of anger against the members who had considered it their duty to fight for the cause of the South; there was nothing but friendship and brotherly feeling. And another quotation from the same report says:

"Charles A. Junghanns, attended our last meeting, having recently before visited his friends in Germany. He was an earnest man, and as a pharmaceutist stood well with his brethren. When the dark cloud of disunion first threatened the West, Junghanns raised a company in Cincinnati, and as its Captain joined the army of Buell. Naturally not robust, the exposure incident to his new life, affected his lungs. At the battle of Shiloh, his loss of voice having rendered him unable to perform his duty as an officer, he deliberately put his first Lieutenant in command of his company, and taking a rifle fought with great coolness and decision, until he fell from a wound in his head. Mr. Junghanns was an advocate of pharmaceutical education, and in his death our Association has lost a valuable member."

Here we have a brother pharmacist who gave his life willingly for his country He was one of the many heroes whose names history does not recount, who did his duty without complaint, without hope of reward, without flourish of trumpet, or limelight exhibition. He went, he fought, he died. Can there be anything nobler and finer as a testimonial than the few simple words written probably by Mr. Procter, President of the Committee? Neither great monuments nor flowery speech could do more to show the spirit of devotion and patriotism that prevailed among the pharmacists of those days.

The meeting itself moved in a quiet, mostly scientific way. There were a great many queries, these having accumulated for two years, and many interesting papers were read. It is to be remembered particularly that Professor Maisch at that time emphasized the idea to encourage the wine growers of the United States to save the tartar deposits. We quote him as follows:

"*Resolved*, That we regard the production of tartar from American wine of great importance, on account of the extensive uses in which that product is applied in Pharmacy, domestic economy and the arts; that we believe that crude tartar and purified (cream of)

tartar will always meet with a ready sale, and that the wine growers will advance their own interests and assist in developing the resources of American agriculture, by making the experiment of saving the tartar."

In this one advice, as well as in many others, we see the national spirit trying to encourage domestic industry and enterprise.

Up to this time there had always been a Committee on Adulteration, and it was moved at this meeting, by Dr. Squibb, to discontinue this committee and appoint in its place a committee of five to be called the Committee on Drug Market.

"*Resolved*, That the Committee on Adulteration be discontinued, and a committee of five be appointed to be called the Committee on the Drug Market, whose duty it shall be to report annually the fluctuations in the supply and demand of drugs, the variations in quality, and adulterations and sophistications coming under their observation, or reported to them by others; and that they be authorized to make a report on any adulterations and sophistications of immediate interest, through the pharmaceutical journals, as soon as practicable after their discovery; and that all members are requested to furnish information of the kind required, without unnecessary delay."

The larger part of the proceedings, was made up of the report of the Progress of Pharmacy, which, owing to the lapse of two years, contained a great deal of interesting and valuable information. It treated particularly of pharmaceutical preparations, materia medica and subjects of historical value; for while most of the investigations and recommendations contained therein have now become familiar facts and rules in Pharmacy, they yet show that, in a great many instances of important chemical and pharmaceutical developments, the first instigation came from the American Pharmaceutical Association.

In spite of the small attendance and the discouraging outlook under which the Association assembled, the spirit for the elevation of Pharmacy and purity in actions and deeds, remained undaunted, as can be seen by the expulsion of a member of the Association, Mr. Hunewell, of Boston. He had used the title and seal of the Association for improper advertising purposes. An effort of this ex-member to be reinstated in 1867 failed, the Association refusing to re-open the case. This is the first expulsion of any member from the American Pharmaceutical Association. The meeting adjourned to meet again in Baltimore, under the presidency of William Procter, Jr.

At the meeting in Baltimore in 1863, there were forty-nine members present. The address of the president was made in a quiet, sober and business like tone. He forecasts a financial difficulty that he thought would befall the Association. According to the Constitution, members who had paid their dues for ten years, became life members and were exempt from further payments. Mr. Procter pointed out that, in a year or two, most of the active members would, according to this clause, cease to pay, and as the increase in membership, owing to political difficulties was not very great, he feared that the Association was approaching financial bankruptcy. This question gave rise to a number of debates in this and following meetings. The president proposed that a life member should pay $1.00 annually; others proposed that they should pay the cost of the proceedings and so on, but nothing definite was done in this matter for a number of years.

Mr. Procter's remarks on the Pharmacopœia were of particular interest as they show of how little account this valuable book was held at that time. He says:

"It is time that our practitioners of Pharmacy of every grade should know that we have a United States Pharmacopœia, by personal inspection. Hundreds, perhaps thousands, have

never seen the work and know it only through the several commentaries and more particularly that in the U. S. Dispensatory, which work is often confounded with the Pharmacopœia."

Before closing this address, he says further:

"I would fain re-impress on you, fellow members, the need we have of more earnestness—I might say enthusiasm—in order to carry forward the several objects of our association with zeal and success. Already our national Association, through the proceedings and manner of organization, is attracting notice abroad, and our co-laborers there are looking to us for fruits proportioned to the profession we make. Let us then individually interest ourselves in the work of progress—each in his own way; and by well directed efforts at home, among our fellow pharmaceutists let us increase our members so as eventually, if possible to include all the better qualified and liberally disposed pharmaceutists and druggists in the whole country. That our Association has been able to keep up its organization, in the face of the discouraging circumstances which now surround it, is to me, gentlemen, a strong evidence of its vitality, and leads to the assurance that when peace once more smiles upon us, our Society will, with a due amount of esprit de corps, become an honor to American pharmaceutists, and command the respect of our brethren everywhere."

Acting on the recommendation of the president, in reference to the Pharmacopœia, resolutions were afterwards proposed by Dr. Squibb, and also by Mr. Parrish, recommending the use and study of the Pharmacopœia to pharmaceutists and physicians and establishing a permanent committee on the Pharmacopœia, consisting of three members, to keep a current commentary on the Pharmacopœia and a record of all useful criticisms and suggestions. The president appointed for such a committee, Dr. Squibb, William Procter, Jr., and Alfred B. Taylor, probably the ablest men who could be found for this purpose in the Association.

Among the queries and articles presented to the Association we notice a great many in which the desire is expressed to develop the cultivation and exploitation of indigenous plants for pharmaceutical purposes. Of interest is also the thirtieth query: "What course should be adopted by Pharmaceutists in view of the present state of the liquor market, as regards factitious Brandies and Wines?" It will therefore be seen that this vexed question, that agitates us still to-day, is as old as the Association.

The Association at that time was aware of its important influence and at the time entertained a friendly spirit for our co-workers in other countries, as seen by the resolution offered by Mr. Parrish, which is well worth producing at the present time; and is as follows:

"WHEREAS, The mutual cultivation of science tends to break down sectional and national distinctions, and to unite all of kindred objects and pursuits in a common bond of friendship and good will, and whereas, we have learned with satisfaction of the Druggists and Chemists of Great Britain having been summoned near the same time as our present meeting, and as we believe for purposes similar to our own; therefore,

"*Resolved*, That we view this movement on the part of our brethren of the mother country with feelings of satisfaction and encouragement, and invite their friendly coöperation and correspondence in advancing a knowledge of the science and the art of Pharmacy, and in promoting the elevation of the profession to a position commensurate with the importance and dignity of its objects.

"*Resolved*, That a copy of these resolutions, signed by the proper officers of the Association, be transmitted to the President of said Conference of Druggists and Chemists of Great Britain by our corresponding secretary, who is also directed to solicit an exchange of their published proceedings for those issued by this Association."

From the Report on the Progress of Pharmacy, we learn that of all the pharmaceutical journals that had existed in the United States before the beginning of the Civil War, only two had been able to survive, namely the American Journal of Pharmacy and the American Druggists Circular. All others had succumbed. A

timid effort is made in the report to condemn proprietary medicines, although no action was taken. The Committee says:

"Several of our German contemporaries have undertaken the task to clear up the mysteries or mystifications of some proprietary medicines sold in Germany and elsewhere at extravagant rates, to the great detriment of legitimate pharmacy. An undertaking of this kind in our country might be attended with benefit; at the same time, however, it is to be feared, that the very opposite of the interests of science and humanity, would almost to a certainty be the gainers, as it would only add to their notoriety."

Of considerable interest are some data given in the report of the Committee on the Drug Market, that had been created the previous year, and presented its first report. It gives us some idea of the value of the drugs in those days, for instance:

"*Alcohol*: Among the articles of primary importance which have fluctuated largely in price, alcohol holds a prominent place. Of the various grades of alcohol, that called 95 percent. or the *Alcohol Fortius* of the present Pharmacopœia, may be taken to represent the whole. At the commencement of the Association's year, namely September, 1862, it sold at 65 cents per gallon. From this it rose, with occasional fluctuations, during the remainder of 1862 to 81 cents, being once as high as 90 cents. By the end of January, however, it reached $1.10, and early in February, brought $1.25. Thence it gradually declined to 95 cents without much fluctuation till the present time, when it varies with the price of whiskey, between 90 cents and 95 cents."

"*Ether*: The price paid for ether varied from 35 cents to 37 cents, at one time being as high as 68 cents, there being no relation whatsoever between the price and quality, nor even between the price and strength."

"*Chloroform:* Ten specimens were examined. Nine of the ten were of full official density, and, judging from the bottle, label and quality, seven of these were from the same manufactory. Not one of the ten was up to the standard, in freedom from foreign compounds, though five of them were so nearly up to it as to be considered very good chloroform. The remainder were less clean though, with one exception, not very unclean. One specimen was very bad, unfit even for external use. The price paid for these were 90 cents to $1.50 per pound."

Most interesting is the report on Tincture Opii, which says:

"An accurate morphia assay is, however, one of the most difficult in the whole domain of of ordinary chemical research, requiring more time and skill than was at the command of the Committee. It was therefore determined, by experiment, that a uniform process for precipitating all the alkaloids could be adopted and relied upon, as giving a tolerably close comparison of the narcotic value of the specimens to which it was applied. Fifty cubic centimeters of the Standard Tincture of the Pharmacopœia, yielded 0.604 grammes of mixed alkaloids by the process adopted. Eleven specimens treated precisely in the same way gave the following results, namely: .424, .327, .343, .308, .486, .427, .480, .427, .340 .338, and .357. These figures indicate that one of the specimens is just about half strength Five are in the neighborhood of 7-12, and the remaining five between eight and ten-twelfths of the official strength. These preparations cost 1.00, 1.00, 1.12, 1.00, .88, 1.06, unknown, unknown, 1.12, and 1.00 per pound.

"Opium, by the case, in the hands of the importers, has brought an average price of, at least, $8.50 per pound throughout the past year, and this opium in drying loses an average of 20 percent. in weight and there are about 14½ troy ounces in the avoirdupois pound, while each pound of the official Tincture represents 1¼ troy ounces of the dried and powdered opium. Therefore, at the net case price of opium, the quantity represented in a pound of properly-made tincture costs over one dollar. Now, upon the theory that the druggists are generally honest, and are selling their tinctures below net cost of the principal ingredients, regardless of the cost of menstruum, time, labor and general expenses—to say nothing of profits—this preparation may be all right, if the above examination be all wrong. But if this theory be too absurd for general credence, then these druggists and pharmaceutists are chargeable in their practice with an amount of dishonesty which, in the shape of a more bold and manly variety of robbery, would be likely to restrict their opportunities of wrongdoing to the narrower sphere of the criminal prisons."

Among the papers presented at this meeting, were two of particular interest, both treating of a still for apothecaries. One was presented by William Procter, Jr., and the other by Thomas Wiegand. Cuts for stills, as they proposed them were given and we notice that these identical cuts are still used to-day in the various books on pharmacy. The most interesting paper of the meeting, was furnished by Mr. Procter on Fluid-extracts. In a most exhaustive and scientific

way, he again goes over the subjects as he did some years ago. But instead of treating all drugs alike as he did in his essay in 1859, he now divides them into four classes, as follows:

Class I. Alcohol Fluid Extracts, with a number of sub-divisions according to the strength of alcohol of the menstruum.

Class II. Acetic Fluid Extracts, menstruum diluted alcohol, or alcohol, with a portion of acetic acid intended partly for preservation, but mainly for retaining important volatile ingredients.

Class III. Saccharine Fluid Extracts; these fluid extracts are prepared with water or diluted alcohol as a menstruum; but little if any of the alcohol is retained in the preparation when finished, which is preserved by the agency of sugar; also having a number of sub-divisions, according to the strength of the menstruum.

Class IV. Various unclassified fluid extracts.

The paper is too long for reproduction in *toto*, but it would be well worth while for a historian to collect all the various papers on fluid extracts and combine them into a history of these important preparations.

Other papers of interest were, "On the Internal Revenue" by Edward Parrish. Owing to the difficulty of raising revenue, new laws of various kinds were repeatedly passed by Congress, and Mr. Parrish gives some interesting advice and consideration which our law-makers of today might do well to heed.

Frederick Stearns presented a paper on æsthetical pharmacy in which he makes a plea for more accuracy and neatness in the fixtures and arrangement of the stock in the pharmacies of those days. The volume closes with one of the nicest little papers ever written, called a "Plea for the Handmaiden," by Mr. Parrish, in which he compares pharmacy and medicine, and comes out in sweet, gentle and yet strong words for the recognition of Pharmacy as a profession. He closes with the words:

"Let me not be charged with hostility to the medical profession. My earliest recollections and life-long associations have taught me to love and honor the high-minded physician who, with zeal for both science and humanity, devoted his life to the most laborious and responsible of pursuits; but this very respect for the physician as he *should* be, induces me to place a proper estimate upon the Physician as he often *is*, and to protest, in the name of common honesty and fair dealing, against the unprofessional favoritism to which I have alluded, as being notorious, especially in our large cities. And now, entering into the second decade in the history of this Association, let us assert for American Pharmacy the claim, founded on a common origin and kindred objects, but as a modest and docile sister to a place beside the numerous and distinguished branches of the medical family. May we all strive to deserve such a position."

The observant reader of this volume of the Proceedings, in which two of the most prominent teachers of pharmacy in those days, William Procter, Jr., and Edward Parrish, presented a number of papers, cannot but notice the difference of style and expression between these two men. Procter is always quiet, calm and sober. He thinks clearly and sharply, and expresses his thoughts in a simple but convincing manner. Parrish, the greater scholar of the two, and a great reader of history and poetry, likes to use flowery and elegant language; and particularly when his heart enters into the argument, as in the last mentioned article of the Handmaiden, he seems to rise to higher spheres, and his language flows like a refreshing, rippling stream among the fragrant flowers of the forest.

Mr. J. Faris Moore, of Baltimore, was elected to preside over the next meeting of the Association, appointed to be held in Cincinnati, in 1864.

The twelfth annual meeting of the Association convened in Cincinnati, Ohio, 1864, and was in more than one respect, a continuation of the preceding one. There

was the same spirit of apprehension and uncertainty, although hopeful signs had already appeared on the horizon. At the opening of the meeting there were twenty-five members present, and a few more arrived later. A few of the leading men of the Association had died during the year, the principal ones being Franklin Bache, of Philadelphia; John Meekim, of New York, one of the earlier presidents of the Association, and George W. Weyman, of Pittsburgh, Pa.

In the nomination of candidates for the presidency, a small change was instituted by nominating three presidents, the reason being, to do away with the precedent of electing a president from the city in which the Association was to meet, as it might happen that such a course would be inexpedient, and, besides, would always exclude worthy members from being candidates from towns where the Association would not be likely to assemble. In spite of this change, however, the habit of electing a president from the place of meeting continued for a number of years. At Cincinnati W. J. M. Gordon was elected president for the following year.

A great deal of the time of the twelfth meeting was taken up with the discussion of certain changes in the Constitution, the principal one being the permanent election of the Recording Secretary with an annual salary of $100.00, and his traveling expenses. This innovation caused a great deal of opposition in the beginning, but it was adopted subsequently. Another vexing question was that of admission of new members. There were at that time the names of many men on the roster who had never signed the Constitution and had never paid dues, and it was pointed out that in the selection of new members greater care should be exercised and no one should be considered a member and receive the proceedings, unless he had paid the dues and signed the Constitution. This question occupied the attention of the Association for many years afterwards. Another change of the Constitution was the creation or the establishment of five standing committees, elected annually, instead of two as before, the five committees being, the Executive Committee, the Committee on Progress of Pharmacy, Committee on Drug Market, each to consist of five members, Committee on Scientific Queries and a Business Committee, each to consist of three members. These resolutions were also adopted at the following meeting, so that the Constitution after the thirteenth meeting contained considerable changes from the original draft.

The report of the Committee on the Progress on Pharmacy contained some information of great interest on the education of the young pharmaceutists in various countries and a comparison was made between education in these countries and the total absence of any rules or regulations in this respect in our country. Strong recommendations were made to use all possible means of bringing about a better education of the apprentice.

The Committee on Drug Market brought in a report that filled more than twenty pages of the proceedings and which contained accounts and complete price lists of various drugs. Owing to the political difficulties, it can be understood that the cost of some of the drugs had risen to an enormous price, we notice for instance that morphine sulphate cost $11.00 an ounce, potassium iodide $7.00 per pound, quinine sulphate $3.55 per ounce, glycerine $1.75 per pound for the English, and, for the American, .75 to $1.50 per pound. The report, written probably by the Chairman, Mr. Maisch, again makes a strong plea for the cultiva-

tion of indigenous plants and the promotion of domestic industry in pharmaceutical and chemical matters. It says:

"Another important and extremely interesting feature, that might be embraced in one of these reports, is the actual supply to our various markets of indigenous plants and drugs. We ought to regard this in connection with the source of this supply as of the utmost importance in order to prevent, if possible, the extermination of medicinal plants in certain localities. We are in the habit of denouncing the short-sightedness of the governments and the population of the South American republics in felling the cinchona trees, for the purpose of obtaining their valuable bark, instead of carefully nursing them, with the view of preserving them until they have yielded the indispensable drug to their utmost capacity; we applaud the Dutch and English governments for their well directed efforts to transplant the cinchonas to the congenial climate of the East Indies, because we hope that if successful, the calamity of an insufficient supply of cinchona bark will be prevented. And yet what are we doing at home? The writer knows that in years gone by, spigelia, senega, serpentaria, ginseng, and probably other drugs used to be collected in the East, but have become almost completely extinct there, so that we had been compelled to look to the South for a sufficient supply, and, since this source has been shut off, to the young and growing states of our great West. It is within the writer's knowledge that, in certain localities in the immediate neighborhood of Philadelphia, cimicifuga, sanguinaria and veratrum viride have almost or entirely disappeared, and it is likely to be so in other places.

"In view of the growing importance of these drugs, does it not become us to pause and reflect upon proper means to be adopted to prevent their complete eradication? Is it perhaps not similar with podophyllum, the use of which appears to have largely increased in late years? With a soil adapted to as large a number of vegetable species as can be found anywhere throughout the world; with a climate reaching almost to the tropics of the South, and extending through the entire fertile part of the temperate zone; with a continent stretching from the shores of the Atlantic to the coast of the great Pacific Ocean, and embracing towering mountains, undulating hills and large plains; we ought never to come under the necessity of seeing our own medicinal plants transferred to other continents in order to prevent an exhaustion of supply."

If we turn to the scientific papers presented at this meeting, we find the first paper presented by our old and highly respected member, C. Lewis Diehl, at that time from New York, on *Oleum Aethereum*. He had joined in the year 1863, as well as another old and highly respected member now deceased, namely, Albert E. Ebert, of Chicago.

Among the papers presented the one by Mr. Gordon, of Cincinnati, on Glycerin, deserves notice. Glycerin was at that time a new article, and Gordon speaks of "its mission as a remedy, as an adjuvant and as a solvent." His paper was in those days a revelation to most of the hearers. Another subject that was new to most of those present was that entitled "Remarks on Dialysis," by William Procter, Jr. While the investigations of both these men, and the information that they gave in their respective subjects, are now common knowledge to every chemist and pharmacist, the appearance of these two papers at this time shows of what strict and keen scientific spirit the early leaders of our Association were possessed and how nothing escaped them that seemed to be of any use or value in their profession. Mr. E. Parrish read a volunteer paper on the "Systematic Course of Study and Manipulation for Students of Pharmacy." He gives in it a complete syllabus for students and pleads in a masterful way for higher education.

The thirteenth meeting of the Association was held in September, 1865, in Boston, and was called to order by Mr. Gordon, of Cincinnati. At this meeting over one hundred members were present and a livelier and more animated spirit seemed to prevail. It certainly was one of the most interesting and spirited meetings, in so far as a full exchange of opinions on many subjects took place, in which the leading men of those days often differed. It is natural that the president should make some reference to the close of the destructive war. He says:

"As members of a scientific Association, having for its main object the advancement of the members of our calling in elevating and useful knowledge, we have as a matter of course nothing whatever to do with politics; our boast is that we meet on the common ground of a brotherhood which interferes not with the religion or politics of any of the members. We feel, therefore, that we have nothing to do as a Convention, assembled for such purposes as I have indicated, with the war (which is now happily closed), other than to deplore its necessity, to mourn over the separation it has caused us for the time being, from many of our brethren; to regret the hindrance it has been to the advancement of our cause, and to rejoice (which we heartily do), in its termination. Many of our members, particularly in the Southern States, have been practically cut off from connection with our Association during the last four years, and their vacant places have been the cause of no little sorrow for those of us who were enabled to meet. I think I express the sentiments of every member of the Association, now met in our annual conclave, when I say that our doors stand open to all those who have been hindered from meeting with us, and a hearty welcome awaits them."

The president also dwells on the many taxes that had been levied during the war and which brought about an increase in the prices of many pharmaceutical and chemical preparations, and he there makes his first plea for free alcohol used as a medicine and in the arts. After nearly fifty years of agitation this same desire still exists.

At this meeting the first mention of an International Congress of Pharmacy is made and while no delegates were appointed it was yet resolved to send a greeting to this meeting, which took place in Brunswick, Germany. It was also resolved, and this is very noteworthy, that the minutes of the first meeting held in 1851, as well as the proceedings of the Association of 1852 and 1855, should be reprinted, as no more copies were available.

The report on the Drug Market, which in previous years had been of such interest, was this year missing. A difference of opinion, as to the value of the U. S. Pharmacopœia, brought out some very interesting remarks from Prof. Parrish, Mr. Procter, Dr. Squibb and Mr. Maisch, as well as others. The question at issue was, whether a pharmacist should be allowed to differ from the methods and strength of certain preparations as laid down in the Pharmacopœia, and the general opinion seemed to be that, while the Pharmacopœia was a valuable and useful book, nobody should be bound by it because a certain man or some men who had written the Pharmacopœia had advocated certain formulas. The lengthy debate by the leading men of the time was cut short however, by the stern veteran, who always showed a clear judgment and the greatest common sense, S. M. Colcord, of Mass. He said in a quiet way:

"One great object to be attained in the strength of preparations is uniformity. This we cannot get if we differ. There must be some standard; and as long as you adopt the Pharmacopœia, you must adhere to it."

Another interesting discussion took place at the beginning of the meeting. It will be remembered that there were a great many of the earlier members who had the idea that the American Pharmaceutical Association should be an Association of delegates and should derive its strength from local associations and colleges of pharmacy. Although this opinion had been defeated at the previous meeting, there were many signs that it still prevailed in the minds of the leading men, and when at the thirteenth meeting delegates from the Alumni Association of the Philadelphia College of Pharmacy presented their credentials, Dr. Squibb objected, on the grounds that the Alumni Association was not a local association, and that the American Pharmaceutical Association could not recognize any society whose mem-

bers were scattered all over the United States. This opinion was shared by many, with Mr. Parrish leading the opposition. President Gordon sustained the objection and ruled the Alumni Association out. An appeal from this decision was made and the ruling of the Chair was not sustained. While this incident may appear of little significance to some, it must yet be considered one of the greatest victories for the Association; for it again emphaiszed its national character and absolutely independent position.

It was remarkable that at this meeting a great many new members were added to the roster, the most coming from Chicago, about 25 in all. Here also joined our beloved friend and treasurer for many years, S. A. D. Sheppard, of Salem, Mass.

The various propositions for changes in the Constitution as mentioned previously, were adopted at this meeting and the Committee on Nominations brought in a full list of candidates for all the offices and committees. H. W. Lincoln, of Boston, was elected president. At this meeting the office of Local Secretary was discussed and at the next meeting added to the list of offices. Mr. Ebert, of Chicago, read at this meeting his first paper on "Oil of Amber." He also took part in all the debates with that youthful impulsiveness and enthusiastic courage which characterized him to his death.

Among the queries the one on Opium and its cultivation in the United States, was of particular interest. Dr. Squibb said:

"I hold in my hand a specimen of opium, made from poppy grown in Virginia, in the neighborhood of Lynchburg, by Powhattan Robertson. It is understood that large quantities were made and used in the medical practice of the Southern armies, when they were prevented from procuring from abroad a sufficient supply of the drug. I would like to have the Association receive it, and refer it to Israel J. Grahame for examination; if he is willing to undertake that matter, it would doubtless be very acceptable to the Association. There is no doubt about its authenticity; it came directly without passing through second hands. I have heard it said that we could cultivate opium in this country; it would be a great advantage."

And again

"I have heard that the culture of opium was attempted in Alabama and in Florida, in the neighborhood of Apalachicola, to a considerable extent. It was found to be deleterious to the field hands, and was abandoned on that account in some localities. That large quantities were produced seems to be indisputable."

This brought forth the remark from Mr. Henchman, of New Hanmpshire, that:

"During the war of 1812, when opium was very scarce, some parties produced it in New Hampshire, and it sold from ten to twelve dollars a pound. It was then of very good quality. After he had established a market, the producer manufactured a very good looking article but much inferior."

Mr. Parrish read an interesting paper on "Filtering and Filtering Apparatus"; while Mr. Maisch read at this meeting a lengthy treatise on "Rhus Toxicodendron," showing that the poisonous principle in this plant is an acid and not, as was supposed a number of alkaloids.

Thomas S. Wiegand, of Boston, read a paper on "The Obligations of Pharmaceutists in Respect to the Instruction of Those in Their Employ," and made a strong plea for the proprietors to instruct their apprentices better, closing with the words:

"In concluding these hasty thoughts upon so important a subject, I would suggest the propriety of the Association urging, with all its influence, the adoption of some scheme

calculated to render the practical instruction of pharmaceutical students a leading feature among our members."

It will be seen from these remarks how feebly and how slowly the demand for higher education arose, and how it took from four to five decades to bring it to the present height. Another paper along the same line, was that called "Fidelity to the Pharmacopœia," by James W. Mill, in which he uses a beautiful simile, and says:

"Guided by no such acknowledged standard of authority, the preparation and dispensing of medicines would be involved in extreme confusion and uncertainty. Like a ship at sea without chart or compass, Pharmacy would drift helplessly on the turbid waters of empiricism, and, finally, despite the utmost efforts of its crew, be lost amid the rocks and breakers of quackish pretention, or the sordidness and selfishness of mere trade and traffic. As the compass is to the mariner, so is the Pharmacopœia to the pharmaceutist, pointing out to him the course by which to steer his pharmaceutical ship, so as to safely guide it into the haven of professional integrity and material prosperity. Itself, indeed, the creature of Pharmacy, it yet in turn aids greatly in its advancement. A standard for the guidance of pharmaceutists themselves, it also furnishes a medium by means of which the physician and pharmaceutist can understand each other in the writing and dispensing of prescriptions. Compiled by able and conservative minds, it is a safe and trustworthy guide, containing within its pages, as it were in a nut-shell, the concentrated results of many previous years of observation and research, thus supplying to all pharmaceutists alike, in a cheap and compact form, the most reliable formulas for the preparation of its various products that science and practical experience have yet devised; fallible, of course, like all human productions, it is none the less entitled to full confidence and support. The Pharmacopœia should, however, be regarded as not simply advisory or recommendatory, but as authoritative."

A number of papers at this meeting dealt with the question of economizing and saving alcohol. Owing to the enactment of new internal revenue laws, the price of a gallon of alcohol had risen from 75c to nearly $3.00 and the question of saving, was of course of great importance. New processes of making tinctures and fluid extracts were recommended and stills of all kinds were presented at this meeting for the recovery of the alcohol used in their manufacture.

The fourteenth annual meeting of the Association was held in Detroit, Michigan, H. W. Lincoln, of Boston, presiding at the first half of the meeting, and the newly elected president, Frederick Stearns, during the second half.

The amendment of the Constitution offered the previous year, to establish the office of "Local Secretary," was adopted in the course of the meeting. Mr. P. W. Bedford, of New York, was elected the first Local Secretary of the Association.

In his address President Lincoln reviewed the activities, the work and the gradual growth of the Association, and attached to it a tabulated statement of the number of members of each state. From this table, in which thirty-two States, one territory, the Dominion of Canada, New Brunswick, and Bermuda were represented, it appears that the number of members had increased since 1853 from forty-four to six hundred and seventy-one, showing a continuous increase with every year with the exception of the last one. This was owing to the fact that a great many members were dropped on account of non-payment of dues.

In the course of the meeting Professor Parrish took occasion to make a few remarks on the facilities of education of pharmacists in the United States, from which we quote the following:—

"There is not a city of the first class in the United States that might not, from the apothecaries residing in it, furnish a sufficient class to sustain a College of Pharmacy."

He then reviews shortly the work of the various colleges and records that the

attendance is proportionally small particularly in the large cities such as New York and Philadelphia. He then continues:

"Now the question for us to consider is this:—Cannot this Association exert its influence to improve the conditions, and extend the appreciation of the colleges in the United States and to establish others when practicable? In Cincinnati they have not for a number of years had any successful teaching. In none of the cities but New York, Philadelphia, Baltimore and St. Louis are there any colleges attempting to get along and keep up the instruction. I don't know that we could do anything, but I think the weight and influence of the Association should be thrown in this direction. That is the way in which we are to raise the status of pharmacy in the United States. It is through generations to come. We that have got ahead, and feel like relinquishing our connection with business, cannot do a great deal except to use our influence in that direction; but the young men themselves, who are to be educated in pharmacy, will raise the American Pharmaceutical Association hereafter to be a body of far greater efficiency than it has ever been, judging from those we have among us who have recently availed themselves of the advantages of pharmaceutical instruction. I hope it will rest in the minds of members of the Association whether we cannot do something to wake up the very large constituency we have to the importance of sending their apprentices and those over whom they have influence, to obtain a systematic instruction in pharmacy."

Frederick L. Stearns took occasion to follow with these words:

"The remarks that have been made by Prof. Parrish, lead me to say a word in regard to the influence of this Association in the respect of the formation of local Associations, not merely educational ones, but societies for mutual improvement other than educational, for social influence and trade influence. We need to get the druggists together in the towns and let them become acquainted with one another, let them know each other better, so as to rub off the corners, trade-jealousy and antagonisms, which are very apt to exist between members of the same profession. I think the influence of the Association can be brought to bear in this direction with great benefit. Throughout the country the druggists who are not members of this Association, and who do not understand its object look upon it with askant eye. They think that by joining the Association they may involve themselves in some way—they don't exactly understand how—but the very moment they become informed as to the objects, advantages and influences of the Association they are ready to join. I can say for myself that I have been a member of this association for fourteen years and have spent considerable amount of money in attending its meetings, but I know it has paid me ten-fold in a pecuniary sense alone, to say nothing of the many other advantages I have reaped from my connection with it. I am very glad, therefore, that the remarks of Prof. Parrish were made and I cordially endorse them."

The remarks of these gentlemen were not followed by any particular action and it might appear unnecessary to record them in a history of the Association. But deeds and actions are very often the result of long and quiet agitation and the men in whose minds the first instigation originated are sometimes forgotten as others take up their work and, often, bring it out as their own. It is the office of the true historian to trace the development of the spirit that underlies all great actions back to the originator; and remarks of the kind recorded above, are more apt to act as a leaven and produce great results than strong, impetuous and radical motions of reform. In these few and gentle words, expressed spontaneously in the midst of the meeting, the beautiful spirit of fraternity that characterized the actions of our Association in those days, comes out in a wonderful way and they show how the leading men of those times cast their eyes and thoughts forward and saw in the future that greatness of the Association to which it has grown at the present time.

When we look over the list of the newly-elected officers of the Association, we cannot but be struck with the galaxy of important and great names that we see this year. Many of them were selected for office for the first time, others had

been working in the interests of the Association since it began. Where could a finer array of great names be found than the following:

Frederick Stearns	Detroit, Mich.
Prof. E. Parrish	Philadelphia, Pa.
Charles A. Tufts	Dover, N. H.
T. S. Wiegand	Philadelphia, Pa.
Albert E. Ebert	Chicago, Ill.
W. J. M. Gordon	Cincinnati, Ohio
Prof. J. M. Maisch	Philadelphia, Pa.
C. Lewis Diehl	Louisville, Ky.
Prof. F. F. Mayer	New York, N. Y.
Prof. P. W. Bedford	New York, N. Y.
Samuel Colcord	Boston, Mass.
Prof. W. Procter, Jr.	Philadelphia, Pa.
Dr. E. R. Squibb	Brooklyn, New York
Robert J. Brown	Leavenworth, Kansas

An interesting debate took place when the special committee on the Internal Revenue Law, Dr. E. R. Squibb, Chairman, presented their report. It was again Prof. Parrish, who objected to the number of laws enacted by Congress and he showed how absurd it was to classify all preparations under the same heading. As the Pharmacopœia was no authority at that time, there were, for instance, a great many formulas for Citrate of Magnesia in use, and according to Prof. Parrish's understanding of the law, all of these required a revenue stamp, except the one made by the formula of the Pharmacopœia, which he claimed to be the worst of all. His own preparations, that were prescribed by physicians all over the country, came under the same class, simply because in some of them he deviated slightly from the formulas of the Pharmacopœia. Dr. Squibb defended the action of Congress and the committee, and a careful perusal of the whole debate shows that the difficulty actually arose from the fact that there was no established standard or authority for any preparation whatsoever.

The Treasurer's report caused lengthy remarks. It had been necessary to levy a special assessment in order to avoid a deficiency, and the treasurer again called attention to the fact that the life members who were exempt from payment were increasing at a rate greater than new members could be procured and earnestly urged relief in this respect.

A number of amendments to the Constitution were proposed. It took however another year until final relief on this vexing question was found.

Delegates were also appointed for the next International Congress held in Paris in 1867.

The report on the Progress of Pharmacy, presented by the Chairman, Enno Sander, comprising about sixty pages of the proceedings, was a very exhaustive treatise on everything that had happened in the previous years in the line of pharmaceutical development. As a peculiarity, it might be mentioned that in nearly every report at those times, the formulas for Syrup of Copaiba and Syrup of Cubebs are given, preparations that have long since disappeared from general use. The Chairman pointed out the difficulty of compiling this report and makes the remark:

"It occurred to my mind that all these difficulties might be obviated to a great extent by appointing a permanent reporter on the Progress of Pharmacy."

This is the first mention of a "permanent reporter on the Progress of Pharmacy."

Interesting papers were presented on the production of wines in various parts of the United States. Albert E. Ebert, from Chicago, presented specimens of Essence of Beef, the first made in this country. From the scientific papers, we notice a great many in this year that contained reports on the improvement of the processes in Pharmacy, as for instance:—William Procter on Sassafras; James W. Mill on Granular Salts; Thomas Doliber on Benzoinated Lard and Valerian; Wilson Pile on Acetate of Ammonia; C. Lewis Diehl on Chemical Processes; Notes on Liquor Bismuth by George F. H. Markoe; and John M. Maisch on Chloroform, on Brandy and on Sherry Wine.

A paper of some historical value was that by Prof. E. Parrish entitled, "A Discourse on Titles." As has been stated, the general name for the members of our profession was PHARMACEUTIST. In this paper, Mr. Parrish proposes the name PHARMACIST. and the word "Pharmacal" instead of "Pharmaceutical."

Dr. Squibb agreed with Prof. Parrish and said: "I consider the term Pharmacist a decided improvement on Pharmaceutist." No action was taken on this point however, and the proceedings continued for a number of years to speak of "Druggist and Pharmaceutist."

The following meeting, the fifteenth, was held in New York in 1867. Owing to the sickness of President Stearns, the Vice-President, Mr. Parrish, presided at the first half of the meeting. This meeting was a note-worthy one in more than one respect. There were nearly 100 members present. As new members at this meeting, mention should be made of Joseph P. Remington, of Brooklyn, and Dr. C. F. Chandler, of New York. Important changes in the Constitution were made so as, finally, to relieve the strain on the treasury. They all tended to raise more funds and an admission fee of $3.00 was required. The annual contribution was to be increased to $3.00; life membership abolished for the future. The fee for the certificate of membership was made $5.00. After long debates on these propositions, they were finally all passed. A great number of the old members resigned their life-membership and continued to contribute like ordinary members. When the Nominating Committee brought in their report, they named Dr. E. R. Squibb, of Brooklyn, for President. Dr. Squibb, however, declined, stating that stress of business prevented him from accepting the office. He asked the Association to substitute the name of J. Milhau, of New York, in place of his own. After a lengthy debate this was finally done, and Milhau was elected President for the following year.

The report of the Committee on Drug Market, which comprised thirty pages of the proceedings, gives a general review and has tabulated statistics of imports in the different ports of entry, giving the amount of importation and the values. This gave rise to a lengthy debate, in which all the leading men of the time participated. The pictures that were revealed of the status of the drug market in the United States were not pleasant ones. Adulteration and sophistication were the rule, and articles intended to sell as adulterants for staple goods were openly advertised as such, as, for instance, Cream of Tartar was adulterated with a series of articles, one called terra-alba and claimed to be "the best and most reliable adulerant of Cream of Tartar." Dr. Squibb stated that in the United States, there was "pure Cream of Tartar;" next "Cream of Tartar," then came "Cream

of Tartar No. 1," "Cream of Tartar No. 2," and so on. No. 1 contained about ten percent. of adulteration, while the lowest grade contained nearly 80%.

Complaints were also made about the varying price of Alcohol, which fluctuated between three and four dollars per gallon.

At this meeting, for the first time, delegates to the International Pharmaceutical Congress made a report to the Association, which in many respects is of great interest. The two delegates who had attended the Congress were William Procter, Jr., and John Faber. Mr. Procter received the honor of being elected one of the Vice-Presidents for the next Congress. At the deliberations of this Congress the delegates from America were as a rule on the negative, voting on all questions alone and against the delegates from Europe. Some of the questions discussed were the following:

"Shall there be unlimited liberty as in ordinary mercantile business? Shall there be a free practise with the guarantee of a diploma and personal responsibility under the common law? Shall there be a wise regulation by law, designed to insure the public interests and protect the pharmaceutists?"

All the delegates voted against the first query; on the second, all voted on the negative except those from the United States. When the third was voted upon, all the votes were cast in the affirmative, excepting those of the United States, which were for the negative.

The second question was: "Is it proper to limit the indefinite multiplication of pharmaceutical shops?" It was referred to a Committee consisting of one member of each country. All reported in favor of limiting the trade except Mr. Faber, of New York, who alone voted in the negative.

The third question was: "Is it proper to demand the creation of institutions of a disciplinary character, destined to maintain the 'honorability' of the profession of Pharmacy, by insuring its correct practise, and to represent and protect it in all its exterior relations?" The committee to whom this was referred reported in the affirmative, which view was adopted by the Congress. The delegates' report then stated:

"As some of the speakers had alluded to pharmacy in America in a way that was calculated to give a wrong impression,—a short statement was prepared by one of us, and permission was obtained to read it in English, so that it might go on record. The origin of the colleges was referred to, and the rise of scientific pharmacy, in the United States, to the separation of dispensing from the practice of medicine. A general view was given of our progress and allusion was made to the subjects of the Pharmacopœia, and to weights and measures."

The report of the Committee on Internal Revenue Law was also of great interest, as it gave the details of a suit by the government against an illicit distiller. In the course of the testimony, two witnesess stated the proportions and yield of the process.

"A quantity of twenty bushels of grain for making a mash, generally consists of fourteen bushels of Indian corn, four bushels of rye, and two bushels of malt, though a much larger proportion of rye is preferred where a fine quality of whiskey is aimed at. The proportion of water used in making the mash, was the subject of investigation, as affecting the issue of a case on trial. According to the evidence for the United States, thirty-four gallons of water were usually added to each bushel of grain in the mash, while the beer, after dilution with cold water, usually contains forty to fifty gallons to a bushel. The best temperature for 'mashing' was stated to be from 158° F. to 190° F."

The methods adopted by the Government to prevent improper manufacture of

alcohol and whiskey, were discussed at length in this report, but no action of any kind was taken.

The report of the Reporter on the Progress of Pharmacy comprised 144 pages, more than one-third of the whole book, and it gives an idea of the enormous amount of work that the Reporter, C. Lewis Diehl undertook in the interest of Pharmacy. Among the many interesting new articles that this report contained we notice Liquid Soap mentioned for the first time and the method of its manufacture from glycerine, oleine and solution of potash. Also "Liquor Carbonis Detergens," a new form of antiseptic for local application, "was said to be an alcoholic solution of coal tar, containing probably carbolic acid and other acids, with dark tarry matter. It forms a permanent emulsion with water." The Solution of Citrate of Magnesia continued to be a puzzling question and four different formulas for this preparation are given.

A good idea of the amount of care that the leading pharmacists took in those days in the preparing of prescriptions, is given in the discussion of a paper, in answer to Query 16, by James W. Mill on Ergot. Mr. Maisch stated that he only powdered two drachms at a time, which took about an hour. He said:

"I will cheerfully add my testimony to the fact of the efficacy of ergot when freshly powdered. I disagree with Mr. Wiegand of the necessity of powdering it for immediate use. As I powder it, it would take me about an hour to powder two drachms. I have a practise of never keeping on hand more than two or three drachms. Powdered ergot is never kept more than two or three weeks—when that time has elapsed, it is thrown away and another portion is powdered and kept on hand; two drachms being about enough to use for one or two prescriptions. The physicians who have used it have been very well satisfied with it. I pass my powder through a sieve of sixty, and that is why it takes a good deal of trouble."

A remarkable resolution was offered by William A. Brewer, of New York.

"Resolved, That while we hold to a high appreciation of the beneficial influence of the accustomed social entertainments tendered to the members of this Association and their friends, by the members of the drug trade in the various cities where the Association meets from time to time, and while we cherish with gratitude and thankfulness the good feeling which prompts these munificent exhibitions of generosity, we cannot but hope that, hereafter, the solicitors of the contributions for such purposes, may get permission from the donors to devote a moiety of said contributions to the endowment of a central library and a cabinet of materia medica and collateral matters for the purposes and use of the Association."

This resolution was later on discussed but not accepted. It is the first crude idea of creating a permanent home central library and museum for the American Pharmaceutical Association.

A communication from the East River Medical Association of the City of New York, signed by Dr. J. Shrady, condemning the renewing of prescriptions, did not meet with the approval of the Association and a somewhat evasive reply was given.

In the report of the Committee of Queries which was read by Mr. Squibb, it is noticed that in the seventeenth query the word "Pharmacist" is used. This is the first time that this form is used in an official paper of the Association.

"What is the best scheme of practical instruction for young men preparing for the business of PHARMACISTS, aside from the necessary service in the shop, with especial view to those who are unable to attend a College of Pharmacy?"

This query was answered by Mr. E. Parrish the following year.

(To be continued.)

THE MINUTES OF THE SESSIONS OF THE SCIENTIFIC SECTION.

The first session of the Scientific Section was held Tuesday afternoon, August 25th, 1914, in Room D, of the Convention Floor of the Hotel Pontchartrain.

The meeting was called to order by Chairman Ruddiman, at 2:00 p. m., who said:

"Conservation seems to be the word of the times. At this meeting several changes are being inaugurated for the purpose of conserving time, and that is one reason why the present Chairman has broken away from the time honored custom of giving a formal address. The present officers of the Section believe that much of the good to be derived from the meeting is to be found in discussions. In the past many a good paper has been passed by, perhaps, because it was not taken in by the members, or they were not prepared to discuss it. To get the good out of the discussion we must have it at the meeting. I presume that some of you are somewhat like myself; when I see a paper printed, followed by a discussion, I look at the discussion first. I think that the discussion is one of the interesting parts of the paper.

"Then, again, where the writer of a paper is not present to read his paper, it has been the custom to read that paper by title. I think that is not fair to the writer. He has put time and labor into a paper full of good ideas and I think it should be given due consideration.

"I have gone over the papers which have been sent in, particularly those where I knew the writer would not be present, and have made a very brief abstract of the papers with the idea of presenting that brief abstract in case the writer is not present. Then if the members of the Section wish the paper read in full, they may have it read.

"I regret to say that the members of the Association have not coöperated with the officers quite as well as I had hoped for. Up to yesterday morning, only about half of the papers announced on the program had been turned in, consequently the officers have not been in a position to arrange the program to the best advantage, or to select papers for discussion. My idea was to have these papers on hand, and to get some one or two members of the Association to read them over beforehand, in order to be prepared to discuss them in a few words and to the point. That is what we want, I think, in the discussions.

"A resolution introduced at the Nashville meeting will be called up for action some time during the meeting, and this resolution provides or requires that all papers be handed in to the Chairman at least one week before the meeting. I understand there will be a discussion of a similar topic before the Council tonight, and it is proposed to require papers handed in to all sections of the Association, to be handed in one month before the meeting. Probably this will be decided upon at the Council and later at the General Session.

"With these few explanations we will proceed at once to the business.

"The first thing in the order of business, as printed in the by-laws, is the Secretary's report.

"SECRETARY SCOVILLE: I have no report to make, Mr. Chairman.

"CHAIRMAN RUDDIMAN: The next order of business is the report of standing committees, and Committees of the Association which report to this Section. Some of these reports are rather lengthy, and with the consent of the Section we will postpone these reports until a later session unless there be some objection.

"MR. PHILIP ASHER: I move that the reports be disposed of in that way."

Motion seconded and carried.

"CHAIRMAN RUDDIMAN: The next order of business is the appointing of a nominating committee, which committee will present two names for each office for the coming year. This Committee is to report before the adjournment of this

section. On this Committee, I will appoint: Wm. B. Day, of Chicago; Martin I. Wilbert, of Washington; Prof. Jordan.

"The Committee will please report before the adjournment of this Session two names for each of the offices, which are Chairman, First Vice-Chairman, Second Vice-Chairman and Secretary. The election of these will be at the last session of the Section.

"The next order of business is miscellaneous business, and under this, I presume, would come the resolution which was presented at the Nashville meeting at the last session too late to be acted upon. I have already referred to this resolution. It is to change the by-laws requiring the papers to be handed in one week before the meeting. As this subject is to be discussed before the Council to-night, I would suggest that we defer action on this resolution until a later session and see what is best to do to keep in harmony with the General Session.

"Is there any other business to come before the Section? (No response.)

"We will proceed at once to the reading of the papers. The first paper on the program is on the subject of 'Uniformity in Dosage of Radium Emanation,' by Dr. Wm. Jay Schieffelin."

MR. SCHIEFFELIN:—Mr. Chairman and Gentlemen of the Section: I feel that it is a presumption for me to address a gathering of so many scientists and teachers of science; what I have to say is for the men who studied chemistry and physics twenty-five years ago, rather than for those who graduated last spring.

In case I tell you things that many of you know, it will be simply because in speaking of this wonderful subject of radium and its emanation from the point of view of pharmacy, it seems important to refer not only to its properties, but to say a word about its occurrence, and the theory of its existence.

CHAIRMAN RUDDIMAN: Dr. Schieffelin's paper, if there are no objections, will take the usual course. The next paper on the program is "The New Science of Immunology," by Dr. F. E. Stewart, of Philadelphia. (Printed in *September* issue.)

M. I. Wilbert then read a paper entitled, "Official and Other Tinctures," which was referred for publication.

C. F. Ramsey then read a paper on, "Difficulties in the Manufacture of Certain Fluid Extracts."

Mr. Scoville presented a paper on, "Glycerite of Bismuth." (Printed in September issue.)

Dr. Stockberger read a paper entitled, "Comparison of the Physical Properties of Some Volatile Oils, with Special Reference to the Requirements of the U. S. P., 1910."

A paper was then presented entitled, "A New Method for the Distinction of True From Synthetic Oil of Wintergreen," by G. H. Watson.

CHAIRMAN RUDDIMAN: The next paper on the program is "Laboratory Notes," by George E. E'We, and C. E. Vanderkleed.

Mr. Vanderkleed then read the above paper in abstract.

The Nominating Committee then presented the following nominations for officers for the ensuing year: For Chairman, H. Englehardt, H. C. Hamilton; for First Vice-Chairman: W. L. Scoville, J. H. Turner; for Second Vice-Chairman: L. E. Brown, F. E. Bibbins; for Secretary: Wm. Mansfield, Azor Thurston.

On motion of Mr. Mansfield the Section adjourned to meet Wednesday afternoon, August 26th, at 2 o'clock.

SECOND SESSION.

The second session of the Scientific Section was called to order Wednesday afternoon, August 26th, 1914, in Room D, of the Convention Floor, of the Hotel Pontchartrain, by Chairman Ruddiman.

On motion, the minutes of the Secretary were approved.

The following papers were presented:—"The Assay of Opium," by A. R. L. Dohme. (Paper read in abstract by Dr. Englehardt.) And "The Lime Assay of Opium," by A. B. Lyons; which two papers were presented for discussion together by Chairman Ruddiman. "A New Method for the Estimation of Glycerin in Pharmaceutical Preparations," by C. H. Briggs, and "On the Estimation of the Assay of Glycerin," by F. T. Bradt. These two papers were also discussed together. "The Determination of Glycerin in Tablets and in Confections," by LeRoy Forman; "Notes on the Assay of Hydrastis and Fluid Extract of Hydrastis," by H. W. Jones; "What is the Best End-Point of the Reaction in the Frog Heart Method of Digitalis Assay," by L. W| Rowe; "Preliminary Notes on a New Pharmaco-dynamic Method of Assay," by Paul S. Pittinger; "Medicinal Plant Gardens," by Dr. Stockberger, (printed in October issue); "A Third Alkaloid from Gelseminum," by A. E. Stevenson and L. E. Sayre; "The Necessity of a Method of Estimating the Intrinsic Value of Essential Qualities of Coffee," by Prof. L. E. Sayre. On motion of Mr. Gordon the Section then adjourned to meet on Thursday morning.

THIRD SESSION.

The third session was convened at Room D, Hotel Pontchartrain, Thursday at 9:30 a. m.

On motion of Mr. Asher the reading of the minutes of the last session was dispensed with.

Papers were read as follows:—

"Morphine Nitrate and Morphine Acetate," by H. Englehardt and O. E. Winters; "Elementary Phosphorus," by the same authors; the "Estimation of Calomel," by R. I. Grantham.

The Section then elected the following officers for the ensuing year:—Chairman, H. Engelhardt; First Vice-Chairman, W. L. Scoville; Second Vice-Chairman, Linwood E. Brown; Secretary, William Mansfield. The report of the Committee on Medicinal Products was presented and on motjon of Mr. Gordon it was accepted to take the usual course. (Report printed in September issue.)

The report of the Committee on Ebert Prize was accepted and referred for publication. (Printed in October issue.)

The report of the Committee on Physiological Testing was received and referred for publication. (Printed in October.)

It was voted to approve the publication of the Digest of Comments on the Pharmacopœia of the United States, published by the Public Health Service of the United States and that a resolution be sent to the Surgeon General to that effect.

The following papers were read in abstract:—"The Glands of Internal Secretion and Their Importance as Therapeutic Agents," by Dr. Cary P. McCord;

"The Composition and Assay of Diacetyl-Morphine Chloride and Heroin Chloride," by R. T. Harris and A. M. Clover; "The Analysis of Cigarettes, Cigars and Tobacco, and the Use of Lloyd's Reagent in the Determination of Nicotine," by Azor Thurston; "The Structural Variation of Allspice," by Dr. William Mansfield; "Cannabis Sativa, Is the Medicinal Value Found Only in the Indian-Grown Drug?" by H. G. Hamilton; "The Pharmacognosy of the Medicinal Rhamnus Barks," by Prof. E. N. Gathercoal; "Notes on the Estimation of Morphine and on Lloyd's Reagent," by H. M. Gordin and J. Kaplan; "Notes on a Glycerin "Substitute," by Joseph Feil; "Notes on a New Alkaloid found in Nux Vomica," by Hugo H. Schaefer.

The hour being late it was voted that the remaining papers be considered as read by title and that they be referred for publication.

On motion of Mr. Kirschgessner it was voted to dispense with the formal installation of officers, and that they be considered as installed in office.

Voted to adjourn.

THE DETERMINATION OF GLYCERIN IN TABLETS AND CONFECTIONS.

LEROY FORMAN.

At the present time the use of glycerin tablets and confections is very great. Upon consulting a number of journals, as well as chemical literature, we find no work of any kind reported upon this class of preparations, which are sold largely through the drug trade.

It is a well recognized fact that glycerin taken in this form has a very soothing effect for irritations of the throat and bronchial tubes.

This investigation was entered upon because there is no available literature on this class of tablets, and, secondly, it was considered as necessary for tablets sold as "Glycerin tablets," to contain an appreciable amount of glycerin, as it is for any medicated tablet to contain an appreciable amount of the chief active constituent for which it is named.

Samples of six different popular brands of such tablets, were purchased in drug stores, two of these samples being plain glycerin tablets, one, honey and glycerin, and three, menthol and glycerin.

The official method of the A. O. A. C. was tried for the estimation of glycerin, but in evaporating the solution, obtained by dissolving the tablets in water, to such a small volume as the A. O. A. C. directs, some glycerin was probably lost, due to the very slow evaporation after the solution had obtained a syrupy consistency, which results when the volume is about 25-30 cc. But if milk of lime is added at this time, the resulting mixture can be evaporated to a stiff paste, which can then be carried through the regular A. O. A. C. procedure. The complete method used is as follows:

Enough tablets were taken to weigh about 5 grammes, these were dissolved in water, evaporated to syrupy consistency, 15 cc. of milk of lime added and the

mixture evaporated to a thick paste, stirring frequently to prevent it from drying hard on sides of dish. This mass was then rubbed in smooth paste with 5 cc. of water, 45 cc. absolute alcohol was added, heated to incipient boiling, and heavy particles allowed to settle. The supernatant liquid was then transferred to filter, and dish and filter washed with 95% alcohol until filtrate measured 150 cc. This was evaporated on a water bath at 85° to a syrupy consistency. This residue was taken up with 10 cc. absolute alcohol, transferred to 50 cc. graduated cylinder and the dish washed with two 5 cc. portions of absolute alcohol and transferred to the cylinder; then 30 cc. of anhydrous ether were added in 10 cc. portions and shaken thoroughly after each addition.

This was allowed to stand until perfectly clear, then decanted through a dry filter, and the cylinder and filter washed with 25 cc. of alcohol-ether mixture in above proportions. This was then evaporated to 5 cc., 20 cc. of water added and evaporated to 5 cc., 10 cc. water added and again evaporated to 5 cc. This was transferred to a 50 cc. volumetric flask, the beaker washed with hot water, then freshly precipitated silver carbonate (0.1 gm. silver sulphate, plus excess sodium carbonate), was added. The mixture shaken frequently during ten minutes, then 0.5 cc. basic lead acetate was added and again shaken frequently during ten minutes and made up to mark.

Twenty-five cc. of the filtrate was placed in a 250 cc. flask, 1 cc. concentrated sulphuric acid added, to precipitate excess of lead, then 30-40 cc. strong bichromate solution (7.5 gm. potassium bichromate and 15 cc. concentrated sulphuric acid per 100 cc.), and 24 cc. concentrated sulphuric acid, and the mixture placed in boiling water bath for 25 minutes. Make up to mark, cool, take aliquot of 20 cc., dilute with 50-70 cc. water and titrate excess of bichromate with ferrous ammonium sulphate solution (30 gm. per liter and 50 cc. sulphuric acid).

Standardize ferrous ammonium sulphate solution against a 1-20 dilution of bichromate solution, then calculate glycerin, by finding excess of bichromate in oxidized glycerin solution. The number of cubic centimetres of strong bichromate added, minus excess found after oxidization, multiplied by 0.01 gm. equals weight of glycerin in the 25 cc. purified solution used. This multiplied by two gives total weight of glycerin. Then percentage is then calculated as usual. The following table shows results of the examination:

Kind of Tablet	Wt. each Tablet	% Glycerin	Wt. Glycerin per Tablet
1. Plain Glycerin	5.46 gm.	3.13	0.1708 gm.
2. Menthol and Glycerin	1.50 gm.	1.00	0.015 gm.
3. Menthol and Glycerin	1.44 gm.	1.09	0.0156 gm.
4. Menthol and Glycerin	1.48 gm.	0.98	0.0146 gm.
5. Plain Glycerin	2.33 gm.	13.60	0.3168 gm.
6. Honey and Glycerin	3.29 gm.	12.07	0.397 gm.

The above results indicate that of the six samples examined, but two (numbers 5 and 6) are really entitled to the use of the word "Glycerin" in an unqualified form in the title.

THE MANUFACTURE OF FLUID EXTRACTS.

BY C. F. RAMSAY.

Those unfamiliar with the manufacture of Fluid Extracts little realize how necessary it is to have a particular knowledge of each drug, especially in making large quantities of these extracts. It is possible to make a pint, or two, of a Fluid Extract without trouble, but in the manufacture of five hundred or a thousand pints, in many cases difficulties will be encountered. Some drugs require to be finely powdered, while others are extracted better in a coarse condition. Drugs must be run in copper, iron, or tin percolators according to their nature. Even after a proper menstruum is found for a given drug, working on a small scale, when large quantities are handled, that menstruum does not always prove satisfactory. In making Fluid Extracts, the object is to have each c.c. represent one gram of drug and in order to do this it is often necessary to continue percolation Some drugs may be extracted in a week, while others require three or four weeks.

Knowing the best menstruum for a given drug on a small scale, it is then necessary to adapt it to manufacturing conditions on a large scale. The drug may be of a mucilaginous nature and will swell so that percolation is impossible.

In such a case it is necessary to mix the drug with shavings or with sawdust. For instance in the manufacture of Fluid Extract of Squill (hydro-alcoholic), we are dealing with a drug that contains about 22% of sugar and a mucilaginous principle, resembling dextrin, known as *sinistrin*. If Squill is ground and macerated with dilute alcohol, it will swell so that percolation is impossible. Even after mixing the cut bulb with shavings, percolation is very slow. After the percolate has been obtained, in some cases two distinct layers will be found, the sugar layer being at the bottom. It is impossible to remove this sugar layer without losing some activity. The best results are obtained by using an 80% alcoholic menstruum and operating on the cut bulb. The writer speaks of the alcoholic extraction of Squill, because a better product is obtained with that menstruum than by the U. S. P. method, as was pointed out by Hamilton in the American Journal of Pharmacy.

Another drug difficult to extract, because of its mucilaginous character is Cereus Grandiflorus. This drug is obtained in the green condition and has to be treated with alcohol immediately. Although 95% alcohol is used as a menstruum, there is a large amount of moisture in the drug which dilutes the alcohol sufficiently to produce a sticky mass. This is a case where it is better to wash the drug with a little alcohol, concentrate this portion in the still, and then percolate the washed drug with more alcohol. In the case of Bladder-wrack, we have another drug difficult to extract because it is so mucilaginous. It is also very difficult to thoroughly extract Calumba, even after mixing with shavings. This drug contains about 35% starch and 5% of gum which accounts for the trouble. Lappa and Squaw Vine are also in this class. The writer would suggest that a strong alcoholic menstruum be used on drugs of this nature.

Some drugs are of a very light nature and, if not properly packed, they will

not give full strength "fluids" as the menstruum will pass through too quickly. In dealing with drugs of this kind, it is best to have them packed in as many percolators as possible, so that a given amount of menstruum will be in contact with the drug a longer time. Otherwise it would be necessary, in most cases, to use so much menstruum to flood the drug, that more than a pint to the pound would be drawn off. Arnica Flowers often rises to the top of the percolator, leaving considerable menstruum at the bottom, which of course is not in contact with the drug. Other drugs in this class, which often give trouble, are Colocynth, Quassia, Red Clover Blossoms, Sourwood Leaves and Marrubium.

Very often drugs are difficult to extract because of their hard structure, as for instance, Physostigma, Podophyllum, and Stone Root. In handling these drugs it is advisable to have them in a fine powder. Physostigma contains about 48% of starch, 23% of proteids, gum and fat which add to the difficulty of extraction. Using a course powder of Physostigma, the writer was able to obtain only from 40% to 60% of the alkaloid.

The addition of glycerin to a menstruum often retards percolation. This is especially noted when the drug contains considerable extractive matter, as the glycerin serves to make it more viscous and sticky, thus making percolation slow and difficult. The writer has experienced trouble in this respect with Uva Ursi, Geranium, Hydrastis, Rose, Hamamelis and Cinchona. Percolation proceeds much easier without glycerin, but of course such fluid-extracts would not be in accordance with the U. S. P.

Some drugs contain considerable extractive matter and, if not properly percolated, are bound to give trouble. With these it is best to divide the drug into as many percolators as possible and reserve a portion of the first percolate from each percolator. Otherwise the menstruum keeps getting heavier and so saturated that it is almost impossible to get it through the last portion of drug. In this class are such drugs as Poplar Buds, Black Willow Bark, Elder Flowers, Helonias, Digitalis, and Mistletoe.

In extracting drugs containing considerable oil, such as Sabal and Sandalwood, it will be observed that the first portion of percolate is milky, due to the separation of oil. In this case the 95% alcohol used as menstruum, is diluted by the moisture of the drug, so that it will not dissolve the oil. This portion should be concentrated in the still and percolation continued with 95% alcohol.

The writer has experienced considerable trouble with the Fluid Extracts of Convallaria and Digitalis. Using the menstruums indicated in the U. S. P., it was impossible to get the full activity from the drug. With Convallaria at times only 50% of the activity was obtained. Many experiments were carried out, on a manufacturing scale, to ascertain the best way of extracting these drugs. It was found that 80% alcohol was the best menstruum for both.

With alkaloidal drugs, it is always necessary to continue percolation, in order to obtain all of the alkaloid. Even then there are some drugs that give trouble. For example, with Cinchona Calisaya, many experiments were made to find out why it was impossible to get the full activity. The writer found that by not adding the glycerin to the menstruum and reserving the first portion of percolate from each percolator very good results were obtained. There is considerable

extractive matter in Cinchona and when glycerin is used in the menstruum percolation is difficult. Sanguinaria (hydro-alcoholic) causes much trouble. The writer tried menstruums of different strengths and also additions of a little hydrochloric, acetic, and nitric acids. If the drug is fine, it packs so that percolation is impossible. The best results were obtained by using 71% alcohol, with about 2% of hydrochloric acid, and having the drug coarsely powdered. Gelsemium is hard to extract, which may be due to the starch and gum which it contains. Nux Vomica also gives trouble. This drug contains about 11% proteid, 6% of sugar, and gum, which may account for the difficulty. Pilocarpus is also troublesome.

Without long-continued percolation, it is sometimes difficult to thoroughly exhaust Sundew, Echinacea, Fringe Tree, Gravel Plant, Adonis, Arbor Vitæ, and Caulophyllum.

As the primary object of Fluid Extracts is concentration, a suitable menstruum should in each case be selected with the object of dissolving and retaining permanently the active constituents of the drug, and in order to do this, each drug must be separately and individually studied. Many experiments are necessary, to determine which is the most suitable menstruum and the best conditions on a manufacturing basis.

NOTES ON A GLYCERINE SUBSTITUTE.

JOSEPH FEIL, PH. G., PH. D.

Two years ago, when Glycerine doubled in price, there appeared on the market two very similar substances, under coined names, at about half the price of this article, and for which the following claims were made: "Mixes readily with water, keeps indefinitely, never becomes rancid or ferments, contains no acids, in many respects and for many purposes is far superior to glycerine; made from cane sugar; especially adapted for use where soft, moist results are desired and for which purpose it is being employed successfully in place of C. P. Glycerine, also as a sweetener for food products, and, finally, for all purposes for which C. P. Glycerine is used." The above statements are misleading in almost every respect, especially in reference to its use in U. S. P. preparations, where on trial I did not find a single successful case, except in one instance, viz.: it could be used to keep solid extracts from becoming hard.

A physical examination showed a slightly yellowish color, no odor, an adhesiveness or viscosity resembling commercial glucose, taste much sweeter than glycerine, not cloying or repulsive, sp. gr. 1.402 at 25° C., soluble in water and alcohol, but not in a mixture of three parts of alcohol and one part ether.

Chemically the substance responds to every test for "Glucose" sugars, abundantly and quickly. It seems therefore, that the substance is a reduced cane sugar as claimed, of complex nature and considerable purity, but it is certainly not a synthetic, or near-synthetic Glycerine, and at best might be a substitute for commercial glucose, however, the price, four times that of the last named substance, would prohibit such use.

UNIFORMITY IN DOSAGE OF RADIUM EMANATION.

WM. JAY SCHIEFFELIN, PH. D.

Radium emanation is assuming importance as a therapeutic agent. The Council on Pharmacy of the American Medical Association, has listed radium and its emanation among New and Non-Official Remedies; an increasing number of physicians are using the emanation in their practice, and articles and advertisements on the subject, are appearing in the medical journals. Since radium and its emanation, are becoming recognized as belonging in the Materia Medica, their production and properties and the standardization of their preparations, come within the scope of Pharmacy.

Radium is prepared from carnotite (vanadate of uranium and potassium), uraninite or pitchblende (uranium oxide), and samarskite (columbate and tantalate of uranium and yttrium). Radium has an atomic weight of 226, and resembles barium in its chemical properties.

In its characteristic property of radio-activity, radium is sublimely superior to its environment: whether in its natural minerals or isolated from them, and in all of its chemical compounds, it is constantly emitting alpha rays and emanation, at a uniform rate, and there is no known way of influencing or halting this activity, which is not affected by the extremes of heat and cold, by pressure or the strongest re-agents. This radio-activity shows the energy which results from the disintegration or transmutation of radium into elements of lower atomic weights. The energy resulting from the resolution of an element into its constituent parts, is vastly greater than that resulting from chemical combination.

The largest amount of energy released in any known chemical reaction, is from the combination of an equal volume of hydrogen and oxygen to form water, but the emanation of radium, in its successive transformations, accompanied by the expulsion of alpha rays, yields more than ten million times as much energy. Ninety-five percent. of the energy in the radiation from radium and its subsequent products, is in the form of the alpha radiation, a corpuscular radiation in which the corpuscles or alpha particles are positively charged helion ions.

The statement that there are one hundred and thirty-six million alpha particles, emitted by one milligram of radium each second, to one who studied chemistry twenty-five years ago, seems almost humorous, but the description of the apparatus for counting the alpha radiations is so simple that a fourteen year old child can understand it.

Counting the number of particles per second, is possible, because physicists have been able to determine, exactly, the diameter of the sphere, on whose surface the particles are far enough apart to count them.

They place a fraction of a gram of radium in a tube, some thirteen feet long, from which the air is exhausted, which tube has a small orifice at the end, to prevent more than a certain number of alpha particles from coming through, and on the other side of the orifice, is a delicate electrometer with a silevered quartz-fibre mirror, by which a point of light is reflected. Each atom of helium,

charged with positive electricity, causes a tremor in the quartz-fibre, which is magnified by the reflected point of light and recorded on a photograph film. They then have the data required for their calculation,—the weight of the radium, the length of the radius and the area of the orifice through which the little particles went, and as they know this is taking place in every direction; that this amount of radium is shooting out these little particles, (actual, visible, corpuscular particles) in every direction all the time, it is a simple calculation to determine what the number of radiations on the surface of the sphere is. You know radium is magnetic, and they adjust the distance by moving the fragment of radium backward and forward, by use of a magnet outside of the glass tube. By means of this apparatus, Rutherford found that there are one hundred and thirty-six million separate alpha particles radiated from one milligram per second. The spinthariscope renders a confirmation of this calculation possible.

I have here a modified spinthariscope, called the radiosmitoscope, which is adjusted so the zinc sulphide screen can be moved out so you can see the radium particles emanating from other bodies outside. I suppose you know how the spintariscope is made.

A needle point is touched to the inside surface of the tube which has contained radium; enough radium adheres to the point of that needle to radiate sparks for 1800 years. Seen through a low-power microscope they are like sparks from a blacksmith's anvil radiating continuously.

A milligram of radium expels one hundred and thirty-six million separate alpha particles per second, which are made visible in a spinthariscope. The alpha rays emitted from one three thousand-millionth of a grain of radium, can be detected by the gold leaf electroscope. The rays are given out uniformly, in all directions, in the form of continuous volleys of tiny projectiles travelling at a rate of 12,000 miles per second. Their range is nearly three inches in air and many yards in a vacuum. They are but slightly penetrating,—being absorbed by thin sheets of aluminum, paper or glass—but pass through a film of glass exceedingly thin. It has been shown that they are atoms of helium charged with positive electricity.

Now, here is a very important thing from a pharmaceutical point of view. Only a fraction of the rays, are set free from solid radium compounds; only a fraction of them come out. The bulk of them are not set free, but are occluded in the salt of radium, or the mineral in which the radium is contained. In order to obtain the largest yield, you must have the largest possible surface. If you have a crystal of chloride of radium, not nearly as many of these little alpha radiations come out as if you dissolved that crystal and spread it out as widely as possible on a surface. If that is done, the number will be very much increased.

Now, the same thing applies to insoluble salts. If you have sulphate of radium, you will not get the greatest amount of emanation from it unless you powder it to the finest degree and spread it out as far as possible. Otherwise, you may get two percent. only, instead of possibly ten percent. of the total emanation available.

The emanation is a gas which, in turn, steadily disintegrates into alpha parti-

cles and radium *A*, from which, in the same way, come Radium *B*, *C*, *D*, *E*, and *F*, in succession. It is from these products, especially Radium *C*, that the beta and gamma rays are given off. The beta rays are electrons of negative electricity, the same as the cathode rays, except that the velocity of the beta particles is much greater, approaching the velocity of light, 186,000 miles a second.

The gamma rays are not considered to be particles of matter, but are waves in the ether, similar to the X-rays. They are far more penetrating than the alpha and beta rays, and are used in the external application of radium in cancer, the others being easily excluded by thin metal filters.

The emanation has an atomic weight of 222 and a characteristic bright line spectrum. It belongs in the group of inert monatomic gases with helium and argon. It is not absorbed by any known re-agent and shows no power of chemical combination. The emanation is one hundred thousand times as active, weight for weight, as radium. Like other gases, it can be collected, confined, and handled, in ordinary glass containers. This is usually done only when it is mixed with enormously greater volumes of air or other gases. Like other gases, the radium-emanation is somewhat soluble in water. It disintegrates at the rate of one-half in about four days, and since the radio-active products, into which the emanation disintegrates, decay at the rate of one-half in a few minutes, it follows that the total radiation from the emanation and the subsequent disintegration-products, decreases at the same rate as the emanation, namely one-half in about four days.

When water with emanation in solution, is left in an open bottle, the emanation diffuses out, and, if the water is shaken up or otherwise disturbed, the process of diffusion of the emanation is accelerated. From ten to thirty percent. of the emanation, in solution in water, may be lost by pouring from one vessel to another.

The strength of radio-active water, is usually expressed in Mache Units per liter. Radio-active water of 2700 Mache Units contains, per liter, as much emanation as is emitted in thirty days by one microgram of radium (1 Mache Unit equals 0.001 electro-static units, one of which equals 3.33×10^{-10} amperes). The radio-activity of water is measured by a fontactoscope, which is an electroscope with a chamber for ionized air and a scale for measuring and timing the discharge. The instrument is standardized by first testing a solution of a known amount of radium chloride which has been sealed thirty days. Great care must be used in sampling the water.

Water is charged, either by dissolving the soluble bromide or chloride of radium or by submerging the insoluble sulphate. The latter is more economical, but the sulphate must be in a minute state of subdivision and must present the largest possible surface.

There are several ways of accomplishing this:

1. Precipitating the sulphate on asbestos and placing it in a porous cell.
2. Mixing it with charcoal and forming into slabs.
3. Mixing it with cement and forming balls.
4. Mixing it with clay and firing it, forming terra cotta.

Most of these processes are protected by patents. The advantage of using

an insoluble salt is, that it can be employed repeatedly and its use continued indefinitely. The terra cotta rods can be used eighteen hundred years and still have half their radium content available.

Moreover they avoid introducing into the organism a permanent radio-active body, as is done if a soluble salt is administered.

While a given amount of radium always emits a constant and uniform amount of emanation, the proportion given out by an insoluble salt depends upon its state of sub-division.

In the insoluble salts, most of the emanation is occluded by the salt itself; in compact form, the sulphate will only yield two and a half percent., while if it is finely powdered and divided, so that is presents a large surface, ten percent. can be obtained.

A uniform strength of emanation, is obtained when the same amount of radium sulphate, is held in the same state of sub-division, submerged in the same volume of water, for the same length of time.

If it is desired to prepare doses of one hundred Mache Units, and the sulphate can be held in such a state that ten percent. of its emanation is available (as is the case when distributed through porous terra cotta) it will be convenient to use an amount of radium which would yield two thousand Mache Units and submerge for four days in tightly closed containers, when one half of ten percent. or one hundred Mache Units will be obtained.

The stronger natural springs contain from one to two hundred Mache Units per liter, with which they are charged while flowing over radio-active minerals or passing through cavities where the emanation has collected. The reason why many mineral waters, when drunk at the springs, give therapeutic results unattainable when they are bottled and transported, is the speedy dissipation of the fugitive emanation, which is reduced to one half in four days unless there is a source for its renewal. The means of renewing the radio-activity of bottled waters or of charging any water with emanation, are afforded by the above-mentioned devices, and the physician may thus prescribe a course of treatment which can be carried out with precision in the patient's home.

The chief effect of the radiations from radium and its disintegration products, is to produce an ionization of the atoms of whatever substance the rays penetrate. Chemical effects follow as a secondary result of the ionization. Von Noorden and Falta say that, "in contradistinction to all other forms of electro-therapy, we possess in the radio-active substances a means of carrying electrical energy into the depths of the body, and there subjecting the juices, protoplasm and nuclei of the cells, to an immediate bombardment by explosions of electrical atoms. We may therefore designate this internal treatment with radio-active substances, internal electro-therapy.

DISCUSSION.

PROF. SAYRE:—What have been the therapeutical results obtained from the use of these radio-mineral waters; have they been of a very reliable character?

DR. SCHIEFFELIN:—I do not feel competent to answer that, but whenever sufficient results have been obtained to make a demand from physicians of standing, it is well for the pharmacists to be in a position to supply it. All kinds of claims are made, and a great many cases which have been treated have been brought to my attention, but not being a physician I hesitate to express an opinion. I am willing to mention if I may, some of the extraordinary

things not connected with medicine, that have come to my attention, in regard to the effects of this weakly charged radium water, upon plants, for example. They have tried the experiment of taking two plants of exactly the same kind, age, and size, with the same number of leaves, etc., and watering them with the same amount of water, and in the same kind of soil, etc., the only difference being that the water applied to one plant was charged with radium emanations, and at the end of ten days, the plant so treated was four times as big as the other one. There have been a great many experiments along this line, which have given some very interesting results. If you use a thousand Mache Units, you will wither the plant; if you give a man 10,000 Mache Units you do not seem to hurt him.

DR. RUSBY:—It may be interesting to you to know, that ever since last October I have been engaged in a systematic study of the effects of radium on crop production. I have charge of the observation of a farm of 130 acres at Northfield, near Cleveland. There we have five plots of each crop, and these plots receive different quantities of radium, one of the plots receiving no radium whatever. At the same time I am in direct charge of a small plot of an acre and a half at Nutley, New Jersey, near my home, and there I have had all these crops for experimentation. The results have been of the greatest interest and of the greatest importance. In the case of radishes I have secured an increase of 70 per cent. in the weight of the crops. One of the most interesting things was the result obtained with radishes grown under glass in the winter time, during February, when the amount of sunlight was very slight, because it was stormy during the whole month and there was snow on the glass during a large part of the time, excluding the sunlight. While the roots, the radishes themselves, increased 20 per cent. in weight, the tops, or the green parts, decreased 17 per cent., showing that the plant produced more food with less action of sunlight on leaf tissues.

A European investigator has shown that the amount of the starch in the plant in the morning was greater than it was the night before, under the influence of radium; the supposition has heretofore been that starch can form only in sunlight and is consumed in darkness. The experiment shows that radium causes starch production during the night, when the plant can not receive the rays of the sun.

Furthermore, in the same soil from which a crop has been taken, if a new crop is planted, without any additional amount of radium, the results are greater even than they were before, instead of being less.

As Dr. Schieffelin says, an excessive amount of radium emanation is injurious. Take, for instance, the amount of radium which produced an increase of 22 per cent. If that amount be increased four-fold, the crop is stunted, and will not grow at all; the plant will grow up two or three inches and has the appearance of having been poisoned, and a crop cannot be produced.

I have made an arrangement with the New York Times to publish in their paper about the first of October, an illustrated account of these operations, and if any of you want to watch for that, you can get it.

The experiments show that radium not only results in the practical improvement of agriculture, but that it acts on the protoplasm of animals in the same way that it does upon the protoplasm of plants.

I also want to say if any of you will write to the Standard Chemical Company of Pittsburgh they will send you a little pamphlet on terms used in the measurement of radium. It is a very good one and it shows how through a misunderstanding of terms, a lot of errors have crept in.

DR. SCHIEFFELIN:—I want to speak of one other thing, in the hope that somebody else will testify, Prof. Rusby himself, perhaps, and that is reported by the man who invented these terra cotta rods. They are just as good for charging the air with radium emanation as for charging water with it. One experiment was made of taking a couple hundred eggs, which were all supposed to be fertile, and putting one hundred in one incubator and one hundred in another; the air in one incubator was kept charged with radium emanation during the period of incubation. Otherwise both incubators were kept under ordinary conditions. Eighty of the eggs hatched in the radium-charged incubator, while only thirty-two of the eggs hatched in the other, and the chickens hatched in the incubator which was not charged with radium, were a half ounce lighter in weight than the chickens hatched in the other.

MR. RUSBY:—It is certainly true that the air can be charged with emanation, because it is on that principle that the electroscope, for measuring radium emanation, is based. It is because the air in the measuring instrument, is charged with radium emanation, that it becomes capable of conducting electricity and by such conduction the electroscope works.

DR. SCHIEFFELIN:—What the pharmacist should prepare for is to meet the demand on the part of the physicians. Since I have been interested in this subject a number of physicians have used these different emanators, and the demand appears greater at the present moment than the different companies are able to supply; as least, that is what I am informed. Now, that is going to be the real test. I have always said that anything that has to be sold, as a remedy, by advertising, does not belong in the Materia Medica, but the moment that physicians continue to repeat orders for a preparation, without it being constantly advertised,

it begins to look as though it had a permanent place in the Materia Medica. I think it is a little too soon to say anything definite about radio-active water, except that for centuries people have been taking treatment at Wildbad-Gastein springs, which contain radium emanation, with beneficial results, which ought to be an eloquent argument in favor of the treatment, with radium emanations, of gout, rheumatism, etc.

Baron Liebig, over 70 years ago, went to Gastein and took the treatment of the waters and was cured, and he said, "I am going to find out what is in that water that cured me," and he analyzed it, and took great pains in investigating it, but when he had finished, he said there was nothing in the water that chemistry at that time could detect, but that there must be something, some influence, some magnetic, or electrical influence, which causes this wonderful power in the water. And he was right, because this power is not chemical, it is electric. These little alpha particles have two positive charges of electricity to each helium atom, and they are volleyed out like volleys from a battleship, constantly at the rate of 136 millions per second from a milligram of radium. We cannot get around that; that has been shown, and if you get some of them inside of you, it is not surprising if they produce some effect.

MR. JOSEPH WEINSTEIN, of New York:—How do the European mineral waters compare with the domestic mineral waters, as to being charged with emanation, say Saratoga Springs?

DR. SCHIEFFELIN:—They have a little, but have not been found to be very strongly radio-active.

MR. WEINSTEIN:—So that they do not compare at all with the European springs?

DR. SCHIEFFELIN:—A lot of them are very weak. I think Saratoga Springs are only faintly radio-active. The Hot Springs of Arkansas are radio-active. All springs are more or less radio-active, but most of them are very weak.

MR. WEINSTEIN:—Are the Hot Springs, of Virginia, radio-active?

DR. SCHIEFFELIN:—Yes.

DR. WOLFF:—The Bureau of Standards will soon be ready to provide a standard radium content. That matter is receiving attention now, and we have also been considering radium preparations, and the Bureau has some of the official copies of the radium standards which have gained international recognition.

DR. SCHIEFFELIN:—Will we be able to get these?

DR. WOLFF:—I think so, shortly.

DR. SCHIEFFELIN:—I am glad to hear that. These emanators have been loaned by the manufacturers in the porous earthenware cups (indicating) and within that are the holders that contain the sulphate of radium. I am sorry to have to take this away, but I have another appointment in the evening and I will soon have to leave.

MR. JOSEPH FEIL, of Cleveland:—I would like to get a description of that arrangement again. You say the radium is kept in a tube, which has an opening at the end, or how is that arranged?

DR. SCHIEFFELIN:—There is another tube beyond the orifice, with vacuum too. The other tube is a brass tube, and that is where the electrical connection occurs; you know if you connect two conductors with an electrical battery and bring them together a spark will jump across. That is the principle upon which that works. The little helium atom, charged with two charges of electricity closes the circuit and makes a very delicate electrometer give a little jerk.

MR. JOHN K. THUM, of Philadelphia:—Dr. Schieffelin says there are some things which he would rather not talk about, which I think should be talked about. His remarks about the statement made by the physician who claims that the taking of the soluble radium salt may produce cancer, as he said the experiments have shown, show that there is a great possibility of this being true, and if so, it would be a great danger to the public.

There seems to be a strange silence on the part of the leaders of surgical science as to the value of radium in the treatment of cancer. And from private conversations with physicians one is led to believe that in some cases where radium has been applied to cancer patients, there seemed to have been at first an improvement, but that subsequently the patients died, three, six months, or a year later, with a diffused carcinomatous condition. So therefore there is a possibility that the application of radium may be dangerous, not only in applying it to the carcinoma, but by drinking it in water. If these radium waters are to become matters of commerce, there should be some regulation or control. It seems to me that radium ought to be more thoroughly understood, and there should be something done to see that the emanations alone are in the water, and not soluble salts. The public should be protected at all costs.

A MEMBER:—The theory that radium might cause cancer has been experimentally disproved. There is no longer any ground for devoting any attention to that. The British Medical Association at its meeting decided that it was time the medical profession and the public should know that in cases of superficial cancer, where the cancers are in places where they can be reached, the only appropriate treatment is the radium treatment. Furthermore

the British Medical Association decided that the use of surgery in fighting cancer was a thing of the past. That is the last announcement which has been made.

DR. SCHIEFFELIN:—I will pass around some of these things for your inspection. These are the earthenware rods, and this is a sample of pitchblende, an extremely handsome sample. You can determine it from its looks, and also from its weight. Uranium is one of the heaviest of all the elements, and for millions of years this uranium has been breaking down to form radium, and this radium is breaking down to form a new element. It is something that we never dreamed of. It is really a transmutation.

This little terra cotta rod does not contain the radium as a little lump, but the radium is distributed all the way through it. Before he rod is made the radium is dispersed through a powder and mixed with the clay, and then the rod is baked.

I wanted to speak about the best authors on radio-activity at the present time. These books (indicating) are very recent. This book is by Paul Lazarus, and is a collection of the best papers on the therapeutic effect of radium.

This book is Soddy's "Interpretation of Radium," which was printed a year ago; and of course, the classic book is Madam Curie's work in two large volumes, which I do not have here.

The last book of all is "Radio-active Substances and their Radiations" by Sir Ernest Rutherford, who did much of his work at McGill University, Canada. This book has gone through a number of editions, and this is the 1913 Edition, and every page is full of important data and reasoning, and there are 664 pages in the book. It is only since 1901, that they have been doing much on this subject. These gases and elements are very recent ones, and yet we know as much, if not more, about their properties, as we do of some of the elements that have been known for a hundred years.

I neglected to call your attention to these tables (indicating charts on wall). The Curie is the regular standard, and that is the amount of emanation that is given off by a gram of radium. Now, this table shows how very small a Mache unit is because it takes 2700 mache units to make a microcurie.

(Table above referred to.)

Curie	Milicurie	Microcurie	Mache Units
1	1000	1000000	2700 millions
0.001	1	1000	2700000
0.000001	0.001	1	2700
0.00000000037	0.00000037	0.00037	1

DR. SCHIEFFELIN:—I would also like to call your attention to this table, showing the strength of various springs in Europe:

RADIO-ACTIVE STRENGTH OF NATURAL SPRING WATERS MEASURED IN MACHE UNITS PER LITER.

Place.	Name of Spring.	M. U.	Author.
Gastein	Rudolph Stollen	24.7	H. Mache
Gastein	Elisabetquelle, N. Q.	26.8	H. Mache
Gastein	Doctorquelle	31.5	H. Mache
Gastein	Fledermausstollen	32.8	H. Mache
Gastein	Chirurgenquelle	54.5	H. Mache
Gastein	Franz Joseph Stollen, V. Q.	61.7	H. Mache
Gastein	Franz Joseph Stollen, H. Q.	64.5	H. Mache
Gastein	Elisabet Stollen, S. Q.	73.7	H. Mache
Gastein	Chorinsky Quelle	83.4	H. Mache
Gastein	Wasserfall Quelle	106.	H. Mache
Gastein	Elisabet Stollen, H. Q.	133.	H. Mache
Gastein	Grabenbecker Quelle	155.	H. Mache
Baden-Baden	Murquelle	24.	C. Engler
Baden-Baden	Buettquelle	82.	C. Engler
Carlsbad	Muehlbrunnen	31.5	H. Mache and S. Meyer
Carlsbad	Eisenquelle	38.4	H. Mache and S. Meyer
Nauheim	Kurbrennen	25.4	P. Lazarus
Nauheim	Karlsbrunnen	28.6	P. Lazarus
Aix-Les-Bains	Alun	47.3	P. Lazarus
Wiesbaden	Kurzquelle	11.95	P. Lazarus
Landeck	Marienquelle	19.7	K. Reichau
Landeck	Friedrichsquelle	34.1	K. Reichau
Landeck	Georgenquelle	98.6	K. Reichau
Joachimsthal Springs	Wasser Stollen	33.	H. Mache and S. Meyer
Joachimsthal Springs	Barbara Stollen	49.5	H. Mache and S. Meyer
Joachimsthal Springs	Nordort am Schweizergang II	185.	H. Mache and S. Meyer

NOTES ON THE ESTIMATION OF MORPHINE AND ON LLOYD'S REAGENT.

H. M. GORDIN AND J. KAPLAN.

1. *Attempt to shake out morphine with a mixture of alcohol and chloroform from a saturated solution of potassium carbonate.*

When a saturated solution of potassium carbonate is shaken with alcohol or a mixture of equal volumes of alcohol and chloroform, most of the alcoholic solvent very quickly separates out on the surface of the heavier aqueous layer. This was proved by adding a definite volume of the alcoholic liquid to an equal volume of the saturated solution of potassium carbonate, shaking the mixture vigorously, and reading off the volume of the upper layer after the liquid has separated in two layers. In all cases the volume of the alcoholic layer was only a little less than the volume of the alcoholic liquid originally taken.

Owing to there being no good immiscible solvent for the extraction of morphine from the solution of its salts in water, an attempt was made to saturate such a solution with potassium carbonate, and to use a mixture of equal volumes of alcohol and chloroform as an immiscible solvent. The aqueous liquid, after being shaken once with an equal volume of the alcoholic liquid, using about 40 cc. of each for about 0.1 g. of morphine in the form of salt, gave no test, in acidified solution, with Mayer's or Wagner's reagent, while, on the other hand, the alcoholic liquid was found to contain, besides morphine, small amounts of potassium carbonate, together with small amounts of other substances, coming either from impurities in the carbonate, or from a partial decomposition of morphine by the latter, or from both sources. Even when the potassium carbonate was previously washed with alcohol and dried, the alcohol-chloroform-solution of the morphine contained small amounts of other substances.

It was thought that by washing the residue left, (after distilling off the alcoholic liquid from the morphine), with a saturated solution of the alkaloid, the impurities could be eliminated, so that the morphine could be determined alkalimetrically. For this purpose, definite amounts of morphine were dissolved in acidified water, the solution saturated with potassium carbonate, (either ordinary or previously washed with alcohol), and then shaken with a definite volume of a mixture of equal volumes of alcohol and chloroform. After the complete separation of the liquid into two layers, an aliquot portion of the upper alcoholic layer was drawn off and evaporated to dryness. The residue was washed, with a saturated solution of morphine in water, until the washings gave no test for potassium carbonate with phenolphthalein, and the morphine determined alkalimetrically, using N/25, H_2SO_4 and N/50, KOH. The indicator was methyl-red.

The experiments showed that, in all cases, the amount of morphine found, ex-

ceeded the amount originally taken, the variation being from two to fifteen percent. Hence the method, at least in the form here described, is not reliable.

2. *Extraction of alkaloids by means of Lloyd's reagent.*

Owing to the facility and completeness of precipitation of alkaloids by Lloyd's reagent, it was thought that this reagent could be advantageously used for the quantitative extraction of alkaloids from their original sources or from the solution of their salts in water.

It is evident that, in order to attain this aim, it is necessary to prove that the alkaloids, once precipitated by Lloyd's reagent, can be readily and completely recovered from the precipitate containing alkaloid and reagent. With a view of determining this point, the following experiments were carried out:

A definite amount of morphine was dissolved in an excess of dilute sulfuric acid, the alkaloid completely precipitated with an excess of Lloyd's reagent, and the precipitate then washed with water until the washings gave no test for sulfuric acid. The precipitate was dried at 60° and then repeatedly extracted with boiling methyl alcohol, which is a very fair solvent for morphine. The solution was evaporated to dryness, and the residue weighed. This residue was free of sulfuric acid, showing it to contain probably free morphine, but its amount was less than 4 percent. of the morphine originally taken.

The precipitate was again extracted with methyl alcohol to which a small amount of ammonia had been added, and after again evaporating the solvent the residue was weighed. The total amount of alkaloid recovered by the two successive extractions, was about 90 percent. of the morphine taken.

Another experiment was made with strychnine, using chloroform which is an exceptionally good solvent for this alkaloid. A dilute solution of strychnine in water acidified with sulfuric acid, was completely precipitated with an excess of Lloyd's reagent, and the precipitate, after thorough washing with water, dried at 60°. A portion of the precipitate containing about 0.2 g. of strychnine was suspended in a little water containing an excess of ammonia, and then repeatedly shaken out with successive portions of chloroform, using 20 cc. of the latter for the first shaking and 15 cc. each time afterwards. It was found that, even after ten consecutive operations, the chloroform did not remove all of the alkaloid, as was shown by evaporating some of the chloroformic extract to dryness, taking up the residue with acidified water, and testing the resulting solution with Mayer's and Wagner's reagents, both of which continued to give a heavy precipitate. Hence, by this method, it is extremely difficult, quantitatively, to recover the strychnine from a solution of its salts in water. Whether other methods would be more successful, will have to be determined by further experimentation.

3. *Attempt to facilitate the removal of strychnine from the precipitate obtained by adding Lloyd's reagent to a solution of a salt of the alkaloid in water.*

The precipitate obtained by adding an excess of Lloyd's reagent to an aqueous solution of a salt of strychnine, is almost perfectly tasteless, though it contains all of the alkaloid of the original solution. This seems to suggest the view that the reagent forms with the alkaloid, an exceptionally stable combination, and this

view is further strengthened by the fact that, as was shown above, it is extremely difficult to completely recover the alkaloid from the precipitate.

On the other hand, as will be reported later by Dr. McGuigan, the precipitate acts physiologically very much like strychnine diluted with an inactive substance, showing that, in the living digestive apparatus, the union of alkaloid and reagent is readily disrupted. Since it was reasonable to ascribe this disrupting effect to the digestive enzymes of the animal body, experiments were made, in order to determine whether some of these enzymes would show the same disrupting effect *in vitro*. If this were so, dilute hydrochloric acid in presence of pepsin, or chloroform in presence of alkali and either ptyalin or trypsin, readily ought to extract the strychnine from the precipitate. The following experiments were, therefore, carried out with these enzymes:

Pepsin. The thoroughly washed and dried precipitate obtained by adding an excess of Lloyd's reagent to an aqueous solution of strychnine sulphate, was digested with very dilute hydrochloric acid containing a little pepsin, shaking the mixture for an hour and then filtering. The filtrate was tested with Mayer's and Wagner's reagents. Neither of these gave any indication of the presence of an alkaloid. Hence *in vitro* pepsin has no disrupting effect on the precipitate.

Ptyalin and trypsin. The precipitate was suspended in a very dilute solution of ammonia containing either ptyalin or trypsin, and the mixture repeatedly shaken out with chloroform. It was found that, even after ten successive treatments with chloroform, the precipitate still retained some of the strychnine. Hence these enzymes, too, have no disrupting effect on the precipitate.

Northwestern University Schools of Pharmacy and Dentistry.

OIL OF BIRCH AND METHYL SALICYLATE,—SOME NEW COLOR-REACTIONS FOR THE DIFFERENTIATION OF OIL OF WINTERGREEN.

BY G. N. WATSON AND L. E. SAYRE.

Anyone who has had experience with oil of wintergreen and the synthetic oil, knows of the uncertainty connected with their identification and differentiation. The physical constants, with one exception, appear to be of little value in distinguishing the true from the artificial oil. We have the authority of C. L. Alsberg that at present, except for the one test—the presence or absence of optical activity,—there has been nothing published which would enable one to make the differentiation, and that this polarization method is only a very important factor to this end. During the past winter, at the drug laboratory, we have had occasion to examine several samples of oil of wintergreen, which brought to our attention the desirability of confirmatory tests. After numerous attempts to fix upon one, it was finally decided that rotatory power of the natural oil was perhaps the only distinguishing characteristic. Admixture with corresponding oils, such as betula and methyl salicylate, being suspected by any great digression of optical activity. Recently I have used some color-reactions which seems to promise excellent re-

sults. These reactions (color-tests) are presented at this section for critical discussion:

An excess of sulphuric acid gives, with the natural oil, a dark red color. The reagent produces no color with the synthetic oil. With oil of birch, a yellow or light shade of red is produced.*

For a confirmatory test, an alcoholic solution of heliotropin and sulphuric acid makes a good reagent. To a few drops of the oil add 2 cc. of concentrated sulphuric acid and two drops of a saturated alcoholic solution of heliotropin. This reagent gives, with the natural oil, a crimson color, changing to deep violet upon dilution with alcohol. Oil of birch gives practically the same color, but not so pronounced. With the synthetic oil the reagent produces a bright yellow color, due, however, to the action of the acid on the heliotropin and not to any action on the oil.

A second confirmatory reagent, and one superior to heliotropin, since it differentiates the oil of wintergreen and oil of birch, is an aqueous solution of chloral hydrate and sulphuric acid. To 1 cc. of the oil in a test tube add 2 cc. of concentrated sulphuric acid, then 1 cc. of a saturated aqueous solution of chloral hydrate. With the natural oil a green color develops, a dark green oil-layer above a lighter green aqueous zone. The addition of 2 or 3 cc. of water aids in bringing out these shades. Oil of birch gives a deep violet oil-layer. The synthetic produces no color except after long standing, when a faint violet color may develop.

DISCUSSION.

DR. ENGLEHARDT: I would like to ask a question. What percentage of synthetic oil of wintergreen in natural oil can be detected by this method?

A method said to be used by the Government for distinguishing synthetic oil of wintergreen from natural oil or detecting adulterations of the latter with the former, seems to be a process similar to that which has already been used for distinguishing synthetic camphor from natural camphor. The method depends on the presence of mechanical admixtures in natural camphor by which a certain color reaction is produced. It was interesting to know whether or not the reaction with natural oil of wintergreen is also due to certain admixtures in the oil which cannot be eliminated in the usual process of rectifying. In order to find this out I began the following experiments. Eight ounces of synthetic oil of wintergreen were mixed with one pound of wintergreen leaves in the one case, and in another case with one pound of birch bark. The mixtures were then distilled with steam and the resulting oil, which should amount to about 8.1 ounces I expect to subject to the vanillin hydrochloric acid or vanillin sulphuric acid tests. On account of lack of time I have not been able to complete these tests. If the tests for natural oil should prove to be positive, the test is without doubt fallacious, since the material taken for preparing the oil consisted almost altogether of synthetic oil.

MR. ASHER:—I would like to say in this connection that Professor LaWall, two or three years ago in the American Journal of Pharmacy endeavored to give the points of distinction between natural oil and synthetic oil. He made quite an exhaustive investigation of that subject.

MR. RAUBENHEIMER:—Besides the optical rotation and the slight difference in color, there is a very simple test to distinguish between the natural Oil of Wintergreen and the synthetic methyl salicylate. It is a physical test and depends upon the peculiarity that, when oil of wintergreen is agitated in a bottle it will produce a foam which will be retained for some time. If on the other hand, methyl salicylate is agitated the same way, it will produce no froth. Nevertheless it should be remembered that even this test can be "faked up" very easily (laughter).

MR. BRIGGS:—These two oils can be tested very easily, by odor. Any one who is accustomed to examining the natural oil, and comparing it, with the artificial oil, will detect a fine delicate aroma in the natural oil that it is almost impossible to put in the artificial oil.

*Some authorities have referred to sulphuric acid as a reagent which increases temperature with the true oil, not so with artificial oil.

OFFICIAL AND OTHER TINCTURES.

M. I. WILBERT, PH. D.

Tinctures have been variously defined, but all attempts to differentiate them, clearly, from other galenical preparations, by a concise restrictive description have failed, because of the necessary exceptions that are involved in any now-available list of official tinctures.

Broadly speaking, they may be designated as hydro-alcoholic solutions of organic, or of inorganic, principles used as medicine or, perhaps even better, as alcohol containing solutions of medicinal substances.

For many years tinctures held the leading place in galenical pharmacy, because of the fact that they represented perhaps the most efficient and most acceptable mode for the administration of the medicinally active constituents of vegetable drugs. It is safe to say, however, that tinctures no longer occupy the preponderating position accorded them two or three decades since, despite the fact that they may be made to represent, in rather a fairly concentrated form, all of the active principles of the drugs from which they are made and are, on the whole, the most stable and most reliable of all fluid preparations of vegetable drugs.

The reasons for the gradual disuse of tinctures are, no doubt, many and varied. Not the least important of these reasons, however, is the fact that, as dispensed at the present time, they are far from being uniformly reliable and, very frequently indeed, physicians using them fail to obtain the desired results.

This failure of a tincture to induce the medicinal action expected of it, or, as sometimes happens, its causation of a secondary or untoward action, may be due to a number of factors, of which I desire to call your attention to but two:—the variability of tinctures of potent drugs, owing to the menstruum employed in their manufacture and the generally objectionable nature of tinctures in which alcohol is the preponderating active ingredient.

Up to the time of the publication of the eighth decennial revision of the Pharmacopœia of the United States, less than a decade ago, no concerted attempt had ever been made on the part of the pharmacopœial revision committees of different countries, to bring about any degree of uniformity in the drug-strength of tinctures, or in the composition of other medicinal substances.

Continued agitation, for a period of half a century or more, by men interested in the improvement of galenical pharmacy, has finally resulted in the development of a marked degree of uniformity in the tinctures of widely-used potent drugs, so that with the publication of the new British Pharmacopœia, these preparations will be practically uniform in every country of the civilized world.

The first International Pharmaceutical Congress held in Brunswick, Germany, in 1865, was called together at the instigation of French and of German pharmacists, who, in 1864, just 50 years ago, began to discuss the practicability of securing some manner of agreement to bring about greater uniformity in the strength of pharmaceutical preparations of potent drugs. In some more or less modified form, the same problem was the basis for discussions at succeeding International Congresses and at the Fifth Congress, held in London in 1881,

Peter Squire outlined a definite and reasonable proposition, for the equalization of the strength of pharmaceutical preparations included in the pharmacopœias of the different countries. He specifically called attention to the very marked differences in the strength of potent tinctures in the several pharmacopœias, and suggested the desirability of making them uniform.

It was not, however, until 1901, that a definite plan of action was found acceptable to the majority of representatives of the different countries, and this plan was later developed at the Brussels Conference held in 1902, and finally put into operation through the international treaty signed by representatives of the several powers, in Brussels in 1906.

Unfortunately, the revisers of our own Pharmacopœia of the United States, because of the inherent conservatism of American pharmacists, have failed to take advantage of perhaps the most important suggestion made in connection with the tinctures included in the Brussels Conference Protocol; that is, the suggestion to use approximately 70 percent. alcohol, in place of the 45 or 50 percent. alcohol as a menstruum.

In a paper reporting a series of experiments on the practicability of adopting the suggestions embodied in the Brussels Conference Protocol, reported in the American Journal of Pharmacy for 1903 (p. 2027), I called attention to the desirability of using the higher strength alcohol and enumerated among other advantages of the international standard menstruum:

That the menstruum used would be uniform in strength for all extractive tinctures of potent drugs.

That the 70 percent. alcohol readily extracts all of the active properties of the drug, while the total extract-content of the resulting preparation is distinctly lower.

That the keeping qualities of the preparation would be greatly improved by the increase in alcohol-content.

That the resulting preparations were elegant in appearance and promised to be quite permanent.

In a discussion on the relative compliance of the various pharmacopœias with the protocol of the Brussels Conference, read at the Richmond meeting of the American Pharmaceutical Association, (Proc. Am. Pharm. Assoc., 1910, v. 58, p. 1145), I reported that the tinctures made in 1902 were still clear and evidently satisfactory, while corresponding preparations made with the U. S. P. VII menstruum of diluted alcohol had generally precipitated badly. I also called attention to the fact that, approximately, 70 percent. of alcohol was then recognized as being a much more efficient antiseptic and preservative than either the more dilute or more concentrated mixtures of alcohol and water and that this one property of 70 percent. alcohol alone, should warrant its careful consideration on the part of the U. S. P. Committee of Revision for adoption as a routine menstruum in place of the diluted alcohol now generally prescribed.

What was said of the preparations four years ago still holds good, with the addition that both the color and odor of the tinctures made with 70 percent. alcohol are as characteristic of the drug now as then. This is particularly true of the tinctures of the leaf drugs, which still retain their original green color, while the

preparations made with 50 percent. alcohol long since became muddy, dark and brown.

The economic reasons that have induced American pharmacists to adopt and to adhere so tenaciously to the use of the weaker alcoholic menstruum are not of sufficient importance to warrant the continuance of the use of the weaker menstruum when the medicinal activity of a preparation is at stake.

Uniformity in the activity of the heart tonic group of drugs, particularly, is a matter of considerable importance because of the fact that, in connection with these drugs, we have no active principles that adequately serve as substitutes for the galenical preparation. Digitalis, more especially, is a drug that offers difficulties in this direction and a recently published paper by H. C. Hamilton (Am. J. Pharm., 1914, v. 86, p. 56-61) emphasizes the desirability of materially increasing the alcohol-content of the menstruum used for extracting this drug and presents data that shows the imperative need for an increase in the alcoholic strength of the menstruum. A preparation reported on by Worth Hale in 1911, (Hyg. Lab. Bull., No. 74) bears out the same contention.

What is true of digitalis is also true of belladonna, hyoscyamus, nux vomica, colchicum and other potent drugs. The tinctures made with 70 percent. alcohol have uniformly demonstrated better-keeping qualities than have the preparations made with dilute alcohol and while, at this late date, it may be impractical to reverse any decision made by the Committee of Revision, it is to be hoped that a sufficient number of pharmacists will interest themselves in the subject to at once prepare a line of international standard tinctures with 70 percent. alcohol, and to preserve them for a decade, in comparison with the preparations made according to pharmacopœial directions and report on them in time for the succeeding revision.

One other feature of considerable importance to pharmacists who expect to practice their profession in years to come, is the retention in the Pharmacopœia of preparations that can be or are being used in prohibition-territory as "tipples." The existing Federal statutes and the regulations based on the internal revenue tax laws, adequately define the limitations of the use of alcohol for medicinal purposes, and recent Treasury decisions clearly indicate that, in the course of time, preparations included in the Pharmacopœia and in the National Formulary, must be subjected to the same critical scrutiny that is now accorded to proprietary remedies marketed for sale as medicines.

Of the 58 tinctures now official in the Pharmacopœia of the United States, not more than 25 are at all widely used and of these 25, at least 4 could be spared. One of the more objectionable of these preparations is Tincture of Ginger, which has acquired a very widespread reputation as a "tipple" and has few or no legitimate uses as a medicine.

One other factor in connection with tinctures, that should be taken into consideration at this time, is the possibility of developing a line of simple extractive preparations of opium that cannot be used in place of smoking-opium. A recent Treasury decision even now classifies the formerly official aqueous extract of opium as smoking-opium and it is quite probable that it will presently be found necessary to include in this classification, the now widely used simple tinctures

of that drug, unless ways and means can be found to restrict the sale of these preparations for use as legitimate medicine.

In conclusion I wish to reiterate the statement that the international standard menstruum of 70 percent. alcohol, is more satisfactory as a solvent for the active constituents of potent drugs than is 50 percent. alcohol. The resulting tinctures retain their appearance and activity for a much longer period of time. So that quite apart from the question of efficiency, they are in reality more economical.

Alcohol-containing preparations that can be or are used as substitutes for alcoholic beverages, should be deleted from future revisions of the Pharmacopœia and the sale and distribution of preparations that are in any way subject to misuse or abuse should be safeguarded in a thoroughly efficient manner.

DISCUSSION.

MR. GORDON: In support of Mr. Wilbert's suggestion that a stronger alcohol would be better for extracting and preserving the active principles of plant drugs, I would cite the practice of the Homeopathic Pharmacopoeia, which uses strong alcohol menstrua for extracting the active principles of plants and a weaker alcohol for dilutions. Experience has proven in this school, that strong alcohol is most efficient for preserving the strong tinctures of vegetable drugs, the dilutions of the strong, or "mother tinctures" being made with an alcohol of weaker strength. The so-called "strong alcohol" corresponds with the 95 per cent. alcohol of the U. S. P., the "dispensing alcohol" is about 88 per cent. absolute alcohol, weaker alcoholic dilutions are used for special preparations. In making tinctures of fresh vegetable drugs the normal amount, or proportion, of moisture is always considered as a part of the menstruum used for extraction.

MR. WM. P. KIRCHGESSNER, of Grand Rapids, Michigan:—Do I understand that by this method the content of moisture of a plant is taken as being 25 per cent.?

MR. GORDON:—Oh, no, the content of moisture in the fresh, green plant from which many homeopathic preparations are made is carefully determined in the following manner: A weighed quantity of the drug is carefully dried, powdering it if necessary at the latter stage, and the amount of plant moisture contained is then determined by the difference between the weight of the fresh drug taken and the dried product. This moisture is, of course, the natural water in the juices of the fresh drug, and it is taken as part of the menstruum used for extracting the active principles of the plant. For example, suppose we were making the "mother tincture" of aconite, the term "mother tincture" being used to denote the strongest tincture made from the drug for further dilution as required. The directions of the Homeopathic Pharmacopœia, we will say, call for a menstruum consisting of 700 parts of alcohol and 300 parts of water. If the fresh, succulent plant is used, the amount of water contained in the fresh leaves would be estimated as just mentioned and that water taken as part of the menstruum used for extraction. Say the leaves contained 20 per cent. of moisture, then to make a tincture of aconite the following proportion would be observed: Alcohol—700 parts, water—100 parts, plant moisture—200 parts, to make 1000 parts of tincture. It must be understood that more of such menstruum will be required to make the final product an exact ten per cent. tincture, but little menstruum is wasted if the drug is exhausted slowly and the marc expressed. Of course in case of a dried drug, the proportion of water does not amount to much and is usually disregarded, unless in cases where it exceeds a certain percentage, I think it is about five per cent., but for tinctures of fresh drugs the moisture is invariably calculated.

MR. KIRCHGESSNER:—I understand the homeopathic school has two pharmacopœias. Which is used?

MR. GORDON:—There is only one official homeopathic Pharmacopœia, that issued under the auspices of the American Institute of Homeopathy, an association of homeopathic physicians which corresponds to the American Medical Association in relation to the two schools of medical practice. However, several different pharmacopœias have been published, just as have different Dispensatories, but all are based on the homeopathic list of drugs recognized by this school. I have prepared a brief history of the evolution of the homeopathic pharmacopœia of the present day which I have presented to the Historical Section, in which I hope the answer to this question will be found. In the early history of homeopathy in this country many of the text books were translations of foreign works, the firm of Boericke and Taefel leading in this enterprise. That is where the confusion may arise, just as if you were to ask me which is the official Dispensatory. Now, the official pharmacopoeia is the "Homeopathic Pharmacopoeia of the United States," issued under the sanction of the American Institute of Homeopathy, but any physician is of course privileged to use any book of reference and to prescribe as he sees fit. The last edition was published in 1914.

after revision by a committee of physicians and pharmacists of the homeopathic school. Radium emanations just spoken of as being effective in such small doses remind me of being near akin to homeopathy.

MR. W. JAY SCHIEFFELIN, JR., of New York:—Referring to radium, it seems to me that when we are considering minute doses, that radium water, or emanation water, ought to be put in the homeopathic pharmacopoeia.

MR. GORDON:—The use of radium in homeopathic hospitals is common. I know of one that has at least $50,000.00 worth.

MR. SCHIEFFELIN:—I remember years ago hearing a receipt for homeopathic punch. You take a little rum, the less you take the better, drop it in the lakes of Wenner and of Wetter. You stir the mixture well, lest it prove inferior, and put one drop of it into Lake Superior. Stir again and then lest it makes you groggy, you place one drop of it into Lake Winnepesaukee, and then every other day you take a drop of that in water. That will make you well, or at least it ought to. (Laughter.)

When you take the mother tincture and make it up to a sixtieth or one hundred and twentieth potency, you actually dilute it as much as the punch. An atom of helium is very minute. An atom of helium is to a drop of water as is a walnut in size to the globe. So you can see what there is in small doses.

MR GORDON:—I can beat that. One of the old tests as to the truth of Homeopathy was the following: Put one teaspoonful of whiskey into a bucket full of water and give an old sailor teaspoonful doses of the dilution until you got him drunk. I have seen it tried, but there was too much water to suit the sailor. (Laughter.) He takes his straight. But to be serious, I have had the privilege of studying a little into the doctrines of Hahnemann, and I am surprised how near he came to our own modern doctrines. We boast of our vaccines and prophylactic serums; what are they but an exemplification of Hahnemann's famous doctrine "Like cures like"? We give the same germs that caused the disease, to cure it. Take the theory of dilution of drugs. It is but the ionic theory in embryo. The homeopathic school does not teach that the weaker a drug is the more powerful it is, just the contrary. The basis of its teachings is that a drug in a finely divided state, dilutions or triturations, is more active than when in mass. Is not that the ionic theory? Does sodium chloride as NaCl exert any chemical action until it is disassociated by solution in water into sodium and chlorine ions?

PROF. L. E. SAYRE, of Lawrence, Kansas:—How about those substances which do not ionize? Do they act?

MR. GORDON:—Not to be ironical I answer yes, just as a flatiron does when applied to the head. How, I don't know from experience.

NOTES ON THE ANALYSIS OF SOME ESSENTIAL OILS.

FRANCIS D. DODGE.

1. *Detection of Pinene in Oil of Lemon.*

To demonstrate the presence of pinene among the terpenes of oil of lemon, or of similar oils, reliance is generally placed on the well-known nitroso-chloride reaction, the crystalline product being identified by its melting point, or the melting point of nitrolamine derivative. As a rule, however, a mixture of nitroso-chlorides is obtained, and the recognition of the pinene derivative is attended with some uncertainty. We have found it convenient, for this purpose, to utilize the reaction of the nitroso-chloride with anilin.

Wallach (Ann. 252, 132) has shown that pinene nitroso-chloride, on heating with anilin, regenerates pinene, with formation of amido-azo-benzene:

$$(C_{10}H_{16}NOCl)_2+6C_6H_5NH_2=$$
$$2C_{10}H_{16}+2C_6H_5—N_2—C_6H_4NH_2+2C_6H_5NH_2HCl+2H_2O.$$

whereas limonene nitroso-chloride passes under similar conditions, into a nitrolanilide:

$$(C_{10}H_{16}NOCl)_2+4C_6H_5NH_2=$$
$$2C_{10}H_{15}NOH.NHC_6H_5+2C_6H_5NH_2HCl.$$

The reaction thus effects a most satisfactory separation of these terpenes, pinene being isolated as such, in convenient shape for further tests if necessary.

Unfortunately, the method, like all based on the nitroso-chloride reaction, has only a qualitative value, for the yield of nitroso-chloride depends largely on the rotation of the pinene, being greatest from the inactive variety, and little, if any, being obtainable from pinene of high rotation, whether dextro- or lævo; and in cases where turpentine oil may have been added to oil of lemon, it is reasonable to suppose that a highly dextro variety would be selected.

In many cases, however, we have obtained positive results by operating as follows:

100 cc. of oil are fractioned very slowly from a three-bulb Ladenburg flask, collecting the first 10 cc. This distillate is then mixed with 10 cc. glacial acetic acid and 10 cc. ethyl nitrite, in a freezing-mixture. 3 cc. 25% hydrocloric acid is now slowly added, and the mixture allowed to crystallize for several hours in the cold. The nitroso-chloride is then filtered off, washed with cold methyl alcohol, and dried. The crystals are now mixed with three times their weight of re-distilled, colorless aniline, and eight times their weight of 95% alcohol, in a small flask, and heated gently on the water-bath. A rather vigorous reaction generally ensues. In the absence of pinene, the solution remains light colored: with pinene, it darkens very noticeably.

After one half-hour, 25 cc. water are added, and steam is passed through the flask. Pinene, if present, distils with a little aniline: the latter is dissolved by addition of a little dilute acetic or hydrochloric acid, and the pinene remains as insoluble light oil, recognizable by its odor.

The limit of sensibility of this method, appears to be at about 10% turpentine in lemon or orange oil. By more careful fractionation of larger amounts of oil, the delicacy of the test could no doubt be increased.

2. *Detection of Chlorine in Benzaldehyde and Oil Bitter Almond.*

The occurrence of *minute* traces of chlorinated compounds in commercial benzaldehyde, can hardly be considered of much importance, but in the case of oil of bitter almond, natural or freed from hydrocyanic acid, the detection of *any* chlorine is *prima facie* evidence of the presence of artificial benzaldehyde Hence, any method of increasing the delicacy and certainty of the test becomes of interest.

We have obtained very satisfactory results by the following modification of the well known combustion process.

A circular filter paper, about four inches in diameter (as free from chlorides as possible), is placed in a suitable funnel, and washed completely chlorine-free with ditsilled water. 25 cc. of this filtrate are set aside as *Blank No. 1.* Fifteen drops of an oil, known to be chlorine-free, are then placed on a small, folded, chlorine-free filter, ignited (as in the U. S. P. method) and covered with the wet filter and funnel. The combustion is regulated by raising or lowering the funnel, as may be necessary.

When all the oil has been burnt, the funnel is inverted, and carefully washed with distilled water until about 25 cc. have run through.

This is *Blank No. 2.* The combustion is then repeated with the sample of oil in question, using the same filter and funnel, which then, on washing, yield 25 cc. of test filtrate. The three filtrates are then treated with five drops of n/10 silver nitrate, and the presence or absence of turbidity or opalescence noted.

By making two blank experiments in this way, a possible accidental contamination with chlorides, would be immediately noticed.

In doubtful cases, we have found that the delicacy of the reaction, is increased by exposing the tubes to direct sunlight, when the presence of a trace of chloride, is shown by a brown coloration. This is evidently due to a "photo-reduction" of the silver chloride by some organic product of combustion.

We have noticed that samples of benzaldehyde which show chlorine by the combustion test, will, also often, give indications of the chlorine *ion* by simple washing with water, and addition of silver nitrate to the clear aqueous extract. For example, a sample, supposed to be the natural oil, freed from hydrocyanic acid, (S. G. 1.0433 at 25°), showed chlorine on combustion, and by the sodium-reduction assay, contained 0.03% Cl.

25 cc. were washed with 25 cc. water; the latter, decanted, and warmed until clear, gave a decided opalescence with a few drop of silver solution.

The washing was repeated until no further chlorine *ion* could be detected, but, by combustion, the oil still showed unmistakable traces of chlorine. It was thought that this water-soluble chlorine, might be due to traces of salt, derived possibly from sodium sulphate, used for drying the oil. This appeared, however, not to be the case, for, on washing the oil with water, and evaporating the latter to dryness, a very slight residue, apparently benzoic acid, was left, in which *no* chlorine *ion* could be detected.

A portion of the same oil, was then shaken with an excess of dilute caustic soda, and carefully distilled with steam. The distilled oil showed chlorine by combustion, but *not* by simple washing. It was allowed to stand for nine months, with an equal volume of water, in a closed bottle, exposed to diffused light. The aqueous solution showed now the presence of chlorine *ions*.

It is evident that the chlorinated derivatives, contaminating benzaldehyde made from benzyl or benzal chloride, undergo a gradual decomposition, with liberation of hydrochloric acid. A similar behavior has been observed with various benzyl ethers and esters, which are not readily obtained free from chlorine.

For the quantitative determination of chlorine, we have employed the sodium-reduction method, in the following form:

10 grams oil are dissolved in 50 cc. absolute alcohol, and 2.5 grams clean sodium added, in small pieces. When the mixture becomes pasty, 25 cc. more alcohol are gradually added. When all the sodium is dissolved 100 cc. water are added, and the mixture evaporated to about 50 cc. A slight excess of *pure* dilute sulphuric acid is run in, the solution chilled, filtered through a wet filter, and the crystalline residue washed free from chlorine. The combined filtrate and washings are now exactly neutralized with n/2 potassium hydroxide, noting the amount used and titrated with n/10 silver nitrate, applying a correction for chlorine in the potassium hydroxide, if necessary.

Examples. Sample A. S. G. 1.0433 @ 25°, 10.046 gms., req. 0.8 cc. $AgNO_3$ (0.03% Cl).
Sample B, S. G. 1.044 10.04 gms. req. 1.22 cc. $AgNO_3$ (0.04%).
Sample C, S. G. 1.043 10.03 gms. req. 0.53 cc. $AgNO_3$ (0.02%).
Sample D, S. G. 1.046 10.50 gms. req. 11.9 cc. $AgNO_3$ (0.39%).
Sample E, (Natural oil, freed from hydrocyanic acid, old). 10.00 gms. req. 0.1 cc. $AgNO_3$ (0.0035%).

This sample contained about 8% benzoic acid; the amount of chlorine found is probably within the limits of error of the method.

3. *Examination of Oil of Lavender.*

The determination of the amount of ester was early suggested as a means of valuation for this oil, though it is evident that linalyl acetate cannot be considered as the only valuable constituent. The method of quantitative saponification, however, gives us, really, only the amount of combined acid, which is assumed to be acetic acid in combination with linalool. Other esters, if present, would give quite erroneous results, and this fact has stimulated the ingenuity of some chemists to provide a variety of synthetic esters, for the express purpose of supplying a fictitious high ester-value to inferior oils. Of these products, the most frequently observed appear to have been glyceryl acetate, or acetin, and terpinyl acetate. The former is especially objectionable by reason of its high saponification value; one percent. of tri-acetin, for example, increases the apparent lialyl acetate content by 2.69%.

Esters of citric, succinic, tartaric, phthalic, salicylic acids, and the mixed esters derived from cocoa-nut oil, have also been found in sophisticated oils, and methods for the detection of some of these have been proposd by Schimmel and Co., and others.

As a rule, these esters are less volatile than lavender oil, and remain as residue, when the oil is redistilled with steam. This test is often useful, and is easily performed.

100 cc. oil are boiled with 150 cc. water in a 250 cc. Ladenburg flask, and the distillate is collected in a "cassia" flask, with the neck graduated for 10 cc. Good oils are readily volatile with this amount of water, and the yield is easily ascertained. The ester-content of the distilled oil should not be more than two percent. lower than that of the original oil, linalyl acetate being not appreciably hydrolyzed under these conditions. The residue can be examined for foreign acids.

For the estimation of acetin, this process is unsatisfactory, acetic acid being found in the distillate, although the greater part remains in the aqueous residue.

We have found that acetin can be determined very conveniently, and with accuracy sufficient for technical purposes, by direct titration in aqueous solution, as follows:

3 grams oil are shaken with 75 cc. water, in a 100 cc. flask. The free acid is then titrated with aqueous n/2 KOH, and phenolphthalein. 0.5 cc. more alkali is added, and the flask is heated at about 80°, with frequent shaking. If the color disappears, another 0.5 cc. is added, and the heating continued, with similar addition of alkali, if necessary, until the solution is permanently alkaline, after one hour's heating. The flask is then cooled, and titrated back with n/2 acid. The alkali used for saponification is calculated over to acetin (1 cc. n/2 KOH = 0.0363 tri-acetin).

Most oils will show a slight amount of water-soluble ester, up to about 0.3%; calculated as acetin, which may be considered as the allowable limit for this method.

No process appears to be available for the determination of terpinyl acetate. Schimmel and Co.'s test (Berichte, Oct., 1911) based on the relatively slow saponification of this ester, seems, however, to be a fairly reliable indication of its presence. In our experience, good oils should not show a difference greater than

0.75% between the ester-values obtained by half hour, and one and one half-hour saponifications.

Fractional distillation with steam, is often of value, the solubility and rotation of the sections being noted. The first 20% fraction should be soluble in three volumes of 70% alcohol; if not, an excess of terpenes is indicated. The rotation will generally increase steadily throughout.

The Specific Gravity of good lavender oil ranges from 0.882 to .892 at 25°, and the rotation from —4° to —7°.

A few examples, from a large number examined, may be of interest.

Sample A. S. G. .8913 @ 25° O. R. —3.20°.
Ester, (½ hour sapon.) 22.90%.
" (1 hour sapon.) 23.10%.
" (1½ hour sapon.) 23.40%.
Distillation test.
10 cc. yielded 9.8 cc., containing 22.1% ester.
Acetin titration, 0.4%.
Fractional distillation:
Section 1. 20%. O. R. — .88°.
2. 20%. O. R. —2.35.
3. 20%. O. R. —2.95.
4. 20%. O. R. —2.95.
5. 15%. O. R. —4.70.

The first section contained about 30% cineol, indicating the presence of oil of spike.

Sample B. S. G. 9893 @ 25° O. R.—5.55°.
Ester, (½ hour sapon.) 28.3%.
Ester, (1½ hour sapon.) 29.9%.
Acetin titration, 0.6%.
Fractions:
1. 20% O. R. —4.80° (insoluble in 70% alcohol).
2. 20% O. R. —5.35.
3. 20% O. R. —6.20.
4. 20% O. R. —6.60.
5. 17% O. R. —6.07.

The saponifications indicate the presence of terpinyl acetate: the insolubility of the first section points to excess of terpenes, probably from some other source.

Sample C. S. G. 0.9094 @ 25° O. R. — 3.30°.
Ester, (½ hour sapon). 29.4%.
Ester, (1½ hour sapon). 30.2%.
Acetin titration, 3.9%.
Distillation test:
10 cc. yielded 9.4 cc., containing 21.2% ester.
Fractions:
1. 20% O. R. —5.15° (insoluble).
2. 20% O. R. —2.43.
3. 20% O. R. —1.91.
4. 20% O. R. —2.64.
5. 15% O. R. —4.75.

The drop in ester, in the distilled oil, and the variation in rotation are significant.

Sample D. S. G. 0.9069 @ 25°, O. R. — 3.96°.
Ester, (½ hour sapon.) 23.6%.
Ester, (1½ hour sapon.) 28.4%.
Acetin titration, 0.4%.
Distillation test:
10 cc. yielded 9.8 cc., containing 26.8% ester.

The high Specific Gravity, and the variation in saponification, are decided indications of the presence of terpinyl acetate.

Laboratory of the Dodge and Olcott Co.

THE DETECTION OF CHICORY IN DECOCTIONS OF CHICORY AND COFFEE.

CHARLES H. LAWALL AND LEROY FORMAN.

In December, 1913, the American Journal of Pharmacy contained an article by the above authors, in which it was proposed to differentiate between pure coffee decoctions and those which contain chicory or any other substance high in reducing-sugars, by taking into account the ratio of reducing-sugar to extractive. In confirmation of the success of the method we would say that in about twenty-five suits which were instituted for violation of the food laws, in which this method of analysis was applied to the samples, no instance is on record of a denial of the adulteration, and fines were immediately paid by nearly all of the offenders, among whom were included several high-class restaurants and hotels. The object of this peper is to confirm the conclusions given in the former article, and to submit some data upon the analyses of additional products and to offer some suggestions so as to ensure accuracy of judgment for those who desire to make it the basis of legal procedure.

In the first place, it must be understood that the strength of the coffee or the method of its preparation has little or no influence upon the results. This was not made as clear in the former article, as it might have been, so we will now state that, using the same coffee and employing such widely divergent methods of preparation as decoction, filtration and percolation, the ratio of reducing-sugars to extractive, did not exceed the maximum of 3% reducing-sugars calculated to extractive, as the following results will show:

	Percentage of Reducing-Sugars in Extractive
Coffee prepared by filtration (simply pouring boiling water through the powdered material contained in a straining cloth)	2.22
Coffee prepared by decoction (powdered coffee boiled with water and filtered washing the residue on filter with boiling water)	2.39
Coffee prepared by percolation (ground coffee extracted in one of the common household percolator coffee urns)	2.68

In the second place, it must be remembered that coffee-decoctions, in common with other aqueous solutions containing organic matter, undergo decomposition quite readily, and as such decomposition is always accompanied by a loss of reducing-sugars, it is imperative that the analysis of the samples be made promptly after the sample is taken, or that some non-reducing preservative substance, like thymol, be added when the samples are taken or received, in order that the composition may remain constant until the analysis is made.

It must also be remembered that the addition of either sugar, or milk, or cream, vitiates the results, in so far as an accurate conclusion may be drawn. Cane-sugar, as commonly added for sweetening, has no influence upon the presence of

reducing-sugars, but, needlessly, complicates the analysis, by rendering it imperative that the sucrose be separately estimated and subtracted from the extractive found, in order to arrive at a knowledge of the amount of extractive due to the coffee, upon which the ratio is based. The presence of milk or cream entirely vitiates the results, as milk-sugar is a reducing-sugar and as the presence of a small amount of milk or cream might escape detection, it is suggested that the centrifuging of about 10 cc. in a centrifuge such as is used for urinary sediments, or of a larger amount in a Babcock milk-testing machine, will quickly result in the identification and rejection of such samples that have had milk or cream added to them either accidentally or intentionally.

It has been found by us in laboratory practice applied to commercial samples, that about one-fourth of the adulterated samples contain a cereal in addition to the chicory. The detection of the cereal is easily made, easy by testing for starch (which is entirely absent in the beverage made from pure coffee) by taking 10 cc. of the liquid, acidulating with sulphuric acid and adding potassium permanganate solution, drop by drop, until the liquid is just decolorized, when a drop of iodine test-solution added to the filtrate gives the clear-blue starch reaction, which is ordinarily obscured by the dark color of the liquid.

The percentage of reducing-sugars in the extractive of a number of commercial products, is herewith given, as being of an informative character:

Name of Product	Percentage of Reducing-Sugars in Extractive
G. Washington Coffee (a coffee extract)	less than 1%
German Stick Chicory (extract)	22.10
Caramel Cereal	13.69
Postum Cereal	5.43
Instant Postum	6.36
Grist Mill	6.64

The four last named are proprietary substitutes for coffee. All of them contained cereal, as shown by the starch-test above described.

COMPARISON OF THE PHYSICAL PROPERTIES OF SOME OFFICIAL VOLATILE OILS WITH SPECIAL REFERENCE TO THE REQUIREMENTS OF THE U. S. P., 1910.

FRANK RABAK.

Chemical Biologist, Drug-Plant and Poisonous-Plant Investigations. Bureau of Plant Industry.

The ninth decennial revision of the United States Pharmacopœia has resulted in numerous changes in the section devoted to volatile oils, especially with regard to the physical properties of the various oils. Among the properties described are color, odor, taste, specific gravity, optical rotation, and solubility, the refractive index being mentioned in only few instances. The importance of these properties should not be underestimated, as the varying quality of any volatile oil may be readily observed by means of them. Because of the inability of the

senses, to measure accurately the color, odor, and taste of a volatile oil, these properties are necessarily somewhat less significant than those which admit of careful and accurate measurement. The color of a volatile oil, is a property which may, however, be influenced greatly, by a number of factors such as the condition of the plant, whether fresh, dry, or partly dry, the stage of growth, and the length of time of distillation. The last factor is especially important since, in numerous distillations of aromatic plants it has been observed that the first runnings are invariably lighter in color than the later portions of the oil. This is, probably, partly due to the fact that fractionation takes place during the distilling process, the lighter, most volatile and usually least colored portions of the oil, distilling over before the denser and higher-boiling constituents make their appearance. In order therefore to obtain a genuine sample of an oil it is of utmost importance that the distillation process be continued until extraction of the oil is complete. The odor and taste will be likewise affected, but the latter is less capable of being described than the former. Only pronounced differences, at best, can be observed by the sense of taste and smell, yet these properties are beneficial, and even *necessary*, in the preliminary examination of a volatile oil.

In direct contrast to the above properties, which are uncertain of expression, are specific gravity and optical rotation, both of which are readily determined and expressed in figures to admit of easy comparison. Specific gravity is, perhaps, the most important of the physical properties of volatile oils and is influenced very much by the source and condition of a plant, as well as by seasonal changes, the effects of these factors being reflected in the density of the oil. Optical rotation and likewise solubility, while possibly less important, are nevertheless dependent to a large extent upon the chemical composition of the oil, which, in turn, is modified by condition of distillation, ripeness of the plant and climatic conditions. Each physical property may be said to serve a more or less definite purpose in general examinations of volatile oils, before the application of special chemical methods for the determination of any definitely-known constiuents.

While a large number of aromatic plants have been under observation by the writer, only those which are officially recognized by the U. S. Pharmacopœia, will be considered here. The paper has been prepared with a two-fold object. First, a comparison of the physical properties of the oils with the requirements of the U. S. Pharmacopœia, 1910, will be made, and, secondly, the properties of each oil will be compared through several successive seasons, in order to show the effect of seasonal influence on the general characteristics of the oils.

The oils which will be discussed with respect to their physical properties, and compared with the limitations adopted by the U. S. Pharmacopœia, 1910, are as follows:—Chenopodium, Fennel, Lavender, Pennyroyal, Peppermint, Rosemary, Spearmint, and Thyme.

At the outset, it is essential to state that the above plants were grown in the same locality for several years. Each plant was distilled with steam, while in full bloom, the material being cut and distilled immediately, in order to prevent any changes which might be brought about by drying or partial-drying, and in order that the oils might be directly comparable from season to season. Distillation was continued in each case, until little or no oil was perceptible, when a

small quantity of distillate was collected in a test tube, true samples of the oils being thereby obtained from the respective plants. The oils were subsequently filtered and kept in tightly-stoppered bottles, in a dark place, until the determinations were made.

The various physical properties as mentioned previously, were carefully determined for each oil, and the results tabulated.

Table I embodies the color, odor, and taste of the various oils distilled during the seasons 1907, 1908, 1909, and 1910. For the purpose of comparison, the requirements of the U. S. Pharmacopœia, 1910, are included in this table as well as the tables following.

TABLE I—COLOR, ODOR AND TASTE.

Oil	Requirements of U. S. P. 1910, 9th Revision	Oils distilled during several successive seasons at Arlington Experimental Farm			
		1907	1908	1909	1910
Chenopodium	Colorless, or pale yellow; characteristic disagreeable odor and taste.	Light brown color; penetrating offensive odor; sharp and bitter taste.	Golden yellow color; characteristic offensive odor; very pungent and bitter taste.	.....	.....
Fennel	Colorless, or pale yellow; characteristic odor and taste.	.....	.....	*Very pale yellow color; sweet pleasant and aromatic odor and taste.	*Pale yellow color; sweet fragrant odor; fatty, sweet taste.
Lavender ...	Colorless, or yellow; characteristic odor and taste.	.....	Pale yellow color; pleasant fragrant characteristic odor; aromatic, slightly bitter taste.	Golden yellow color; agreeable flowery characteristic odor; aromatic bitter taste.	Pale brown color; agreeable, flowery odor; aromatic, bitter taste.
Pennyroyal ..	Pale yellow color; characteristic odor and taste.	.....	Bright yellow color; minty characteristic odor; minty, slightly bitter taste.	Very pale yellow; pleasant, minty odor, pungent, minty taste.	Yellowish color; odor agreeable, not noticeably minty; bitter pungent, minty taste.
Peppermint ..	Colorless; strong odor of peppermint; pungent cooling taste.	Greenish-yellow color; agreeable minty odor; pungent cooling taste.	Light yellowish green; pleasant minty odor; very pungent; cooling taste.	Pale yellow; agreeable, minty odor; pungent minty taste.	Pale yellow; mild, agreeable, minty odor; fatty pungent, cooling taste.
Rosemary ...	Colorless, or pale yellow; characteristic odor; camphoraceous taste.	.....	.....	Yellow color; pleasant, aromatic odor; slightly bitter, camphoraceous taste.	.....
Spearmint ...	Colorless, yellow or greenish yellow; characteristic odor and taste.	Light yellowish color; sharp, aromatic, characteristic taste.	Light green color; agreeable, characteristic odor; characteristic, minty, pungent taste.	Pale green; agreeable, flowery odor; bitter, pungent, aromatic taste.	Dark golden yellow; strong aromatic, charcteristic odor; very pungent, bitter, characteristic taste.
Thyme	Colorless, or red; characteristic odor and taste.	Light brown color; strong thymol-like odor; extremely pungent taste.	Golden yellow, mild, not unpleasant aromatic odor; very pungent taste.	Light brown color; flowery strong, thyme-like odor; very pungent taste.	Brownish red color; thymol-like, not unpleasant odor; intensely pungent taste.

* Oils from fruiting tops.

From Table I it will be seen that the Chenopodium oils distilled in 1907 and 1908, were darker in color than the requirements of the Pharmacopœia. Fennel oils distilled in 1909 and 1910, corresponded more closely to the color requirements. Lavender oils, on the other hand, from three successive season's crops,

showed some variation in color, from pale-yellow to a pale-brown, probably because of differences in the plant material due to seasonal conditions. Pennyroyal and rosemary oils corresponded fairly closely in color to the Pharmacopœial requirements, while peppermint and spearmint varied greatly from year to year. Thyme oils from seasons of 1907, 1908, 1909, and 1910 ranged from a golden-yellow to brownish-red color, a colorless oil never having been distilled during the number of seasons in which this plant has been under observation. The odor and taste of the various oils, are described in most cases as "characteristic," hence a comparison of these properties could not be made, other than among the individual oils from season to season. The properties of odor and taste, will be seen to differ considerably in some cases, doubtless due to a variation in composition of the respective oils.

It would seem, from the data presented, that the color of an oil, is a property which is subject to wide variation, the odor and taste also showing differences sufficient to be more or less easily detected by the senses. While descriptions of these properties depend largely upon individual sensitiveness, a careful analytical description of odor and taste would be decidedly advantageous.

TABLE II—SPECIFIC GRAVITY.

Oils	Requirements of U. S. P., 1910, 9th Revision 25° C.	Oil distilled during several successive seasons at Arlington Experimental Farm			
		1907	1908	1909	1910
Chenopodium	0.955 to 0.980	0.933 (25° C.)	0.944 (24° C.)	.....	.....
Fennel	0.953 to 0.973	.....	.....	0.927 (23° C.)*	0.944 (24° C.)
Lavender ...	0.875 to 0.888	.....	0.890 (24° C.)	0.892 (20° C.)	0.8962 (23° C.)
Pennyroyal ..	0.920 to 0.935	.....	0.9195 (24° C.)	0.9209 (22° C.)	0.9365 (23° C.)
Peppermint ..	0.894 to 0.914	0.9048 (25° C.)	0.924 (23° C.)	0.9203 (22° C.)	0.9273 (23° C.)
Rosemary	0.894 to 0.912	.....	.....	0.8947 (21° C.)	.....
Spearmint ...	0.914 to 0.934	0.923 (25° C.)	0.918 (22° C.)	0.9289 (21° C.)	0.9252 (24° C.)
Thyme	0.894 to 0.929	0.898 (25° C.)	0.897 (24° C.)	0.9144 (21° C.)	0.936 (24° C.)

* Oils from fruiting tops.

It will be observed, from Table II, that the specific gravities of the Chenopodium oils, easily fall within the requirements prescribed by the Pharmacopœia. The densities of the fennel oils, are below the standard, which is, doubtless, due to the fact that these oils were distilled in 1909 and 1910, from the partly ripe fruiting-tops and from ripe fruiting-tops respectively, while the Pharmacopœia specifies the oil from ripe fruit. Lavender oils from the seasons of 1908, 1909, and 1910 are uniformly regular and higher in specific gravity than the requirements. These oils were distilled from fully matured fresh flowering-tops of lavender. Since this oil is produced in foreign countries exclusively, it is probable that the higher densities of the American oils are due to climatic and soil conditions contingent upon geographical sources. No important differences were revealed in the specific gravities of the pennyroyal oils included in the table, the slightly higher specific gravity of the 1910 oil, being due to the slightly lower temperature at which it was observed. The peppermint oils from the four successive seasons are perhaps somewhat higher than the upper limit specified by the Pharmacopœia. This is especially true of the oils distilled during the seasons of 1908, 1909, and 1910. The slightly lower temperature at which the densities were taken, would probably not account for the higher figures obtained. Rosemary

and spearmint oils shows no noteworthy discrepancies, while only the thyme oil of 1910 is beyond the upper limit of the Pharmacopœial requirement.

It is most evident that the specific gravity, is a property which is materially influenced by the numerous factors and conditions attending the distillation process, and the nature and condition of the plant material as influenced by seasonal variations.

TABLE III—OPTICAL ROTATION.

Oils	Requirements of U. S. P., 1910, 9th Revision 100 mm. tubes	Oil distilled during several successive seasons at Arlington Experimental Farm			
		1907	1908	1909	1910
Chenopodium	—4° to —10°	—7.7° Specific rotation	—6.6° Specific rotation	.....	.....
Fennel	+12° to 24°	.....	.....	+14.9° (50 mm. tube)*	+13.8° (50 mm. tube)*
Lavender	— 1° to —10°	.....	—4° (50 mm. tube)	—6.5° (50 mm. tube)	—1.4° (50 mm. tube)
Pennyroyal ..	+17° to 28°	.....	+34.4° (50 mm. tube)	+28.6° (50 mm. tube)	+13.3° (50 mm. tube)
Peppermint ..	—20° to 35°	—10.4° (50 mm. tube)	—4.5° (50 mm. tube)	—10.6° (50 mm. tube)	—5.7° (50 mm. tube)
Rosemary	.....	.....	.....	—2.4° (50 mm. tube)	.....
Spearmint ...	—35° to 50°	—45.6° (Specific rotation)	—27.3° (50 mm. tube)	—16.1° (50 mm. tube)	—20.3° (50 mm. tube)
Thyme	Slightly lavogyrate	—1.3° (50 mm. tube)	—0.6° (50 mm. tube)	—1.1° (50 mm. tube)	.....

* Oils from fruiting tops.

The optical rotation of the Chenopodium oils, as shown, fall well within the limits prescribed by the Pharmacopœia. The fennel oils, as in the case of the specific gravities, are higher in rotatory power than the limits of the Pharmacopœia this being due in all probability to the state of ripeness of the material when distilled, as previously discussed. The rotation of the lavender oils, shows much variation from year to year, the oil from the 1909 crop being considerably higher than the limit of optical rotation of the Pharmacopœia. The pennyroyal oils likewise, differ in rotation from season to season, the oils of the 1908 and 1909 crop being conspicuously higher than the standards, especially if reduced to terms of rotation in a 100 mm. tube, only the oil of the 1910 crop falling within the limits of rotation. Marked differences in rotation, are also noted in peppermint and spearmint oils during four successive seasons, varying from —4.5° to —10.6° in the former and —16.1° to —27.3° in the latter, all observations being taken in a 50 mm. tube. Peppermint oils, from the 1908 and 1910 crops, are below the minimum optical rotation adopted by the Pharmacopœia. The oil of the 1908 crops of spearmint, shows an optical rotation above that of the maximum of the Pharmacopœia. The thyme oils were slightly lævogyrate, varying from —0.6° to —1.3° in a 50 mm. tube.

In the matter of the optical rotation it is again obvious that variability in this property is more or less marked, showing that the composition of the oils change somewhat from season to season depending upon the numerous factors previously mentioned.

TABLE IV—SOLUBILITY.

Oils	Requirements of U. S. P., 1910, 9th Revision	Oils distilled during several successive seasons at Arlington Experimental Farm			
		1907	1908	1909	1910
Chenopodium	8 vols. 70% alcohol	1 vol. 80% alcohol clear solution	0.75 vol. 80% alcohol clear solution.	.....	.....
Fennel	8 vols. 80% alcohol 1 vol. 90% alcohol	.....	.....	* Turbid in 12 vols. 80% alcohol. 2 vols. 90% alcohol with clear solution.	* 2.5 vols. 80% alcohol. Clear in excess.
Lavender	3 vols. 70% alcohol	.....	0.75 vol. 80% alcohol clear solution.	1.2 vols. 80% alcohol.	0.8 vol. 80% alcohol. Turbid in 4 vols. or more.
Pennyroyal ..	2 vols. 70% alcohol	.....	1 vol. 80% alcohol slightly turbid on further dilution.	0.5 vol. 80% alcohol. Clear solution.	All proportions in 80% alcohol.
Peppermint ..	4 vols. 70% alcohol with only slight opalescence.	1.5 vols. 80% clear solution	1.25 vols. 80% alcohol clear solution.	1.2 vols. 80% alcohol; turbid with 2 vols. or more.	0.6 vol. 80% alcohol; turbid with 2 vols. or more.
Rosemary	10 vols. 80% alcohol.	.....	.....	Insoluble in 80% alcohol with clear solution. 0.75 vol. 90% alcohol.	.....
Spearmint ...	1 vol. 80% alcohol; cloudy on further dilution.	1 vol. 80% alcohol clear solution.	Turbid in all proportions with 80% alcohol. 1 vol. 90% alcohol cloudy on further dilution.	1 vol. 80% alcohol; turbid with 2 vols. or more.	0.4 vol. 80% alcohol; turbid with 2 vols. or more.
Thyme	2 vols. 80% alcohol.	1 vol. 80% alcohol clear solution	2 vols. 80% alcohol with turbidity. 1 vol. 90% alcohol, faint turbidity when further diluted.	1.6 vols. 80% alcohol; clear on further dilution.	1 vol. 80% clear on further dilution.

* Oils from fruiting tops.

It is unfortunate that the solubilities of all the oils in question, were determined with 80% and 90% alcohol, the Pharmacopœial requirements specifying 70% alcohol in several cases. However, the results will at least admit of comparisons being made of the solubility of the oils from one season to another.

The solubility of the Chenopodium oils from crops of 1907 and 1908, vary but slightly.

The fennel oils are widely separated with respect to solubility in 80% alcohol, the oil of the 1909 crop being turbid in 12 volumes of 80% alcohol, while the oil of the 1910 crop dissolved in 2½ volumes of 80% alcohol with a clear solution The latter oil being distilled from ripe fruiting-tops, probably accounts for its much greater solubility. No doubt distinct differences exist between the composition of these two oils,—the oil from the partly unripe fruiting-tops consisting undoubtedly of a larger proportion of terpenic compounds.

Distinct differences in the solubility of the lavender oils, are also disclosed, as may be seen from the table. Comparison with the requirements of the Pharmacopœia, are incapable of being made, in case of lavender and pennyroyal oils, because of the employment of alcohol of different percentage strength. In a like

manner, pennyroyal oils from 1908, 1909, and 1910 crops, show considerable diversity with regard to their solubility in 80% alcohol. Peppermint oils from the four seasons crops exhibited very constant solubilities in 80% alcohol, the 1910 oil being most soluble. Rosemary oil ditsilled from 1909 crop, was found to be insoluble in 80% alcohol to make a clear solution; the Pharmacopœial requirement of the oil being 10 volumes of 80% alcohol. Spearmint oils exhibited decidedly variable solubility in 80% alcohol. The oil from the 1908 crop, was insoluble to a clear solution in 80% alcohol while the 1910 oil, in direct contrast, was soluble in 0.4 volume, becoming turbid in excess of two volumes of 80% alcohol.

The thyme oils distilled during the four successive seasons, were soluble in one to two volumes of 80% alcohol, all being within the requirements of the Pharmacopœia in this respect.

The results of the comparison of physical properties of the several official volatile oils, are such as to clearly indicate that conditions of cultivation, harvest, and distillation affect the physical constants of the oils. It is noteworthy of mention, in connection wtih the data presented, that all of the plants from which the above oils were obtained, were grown and distilled in the same locality, under identical conditions of harvest and distillation, yet variations are evident in the properties of the volatile oils. That seasonal conditions affect the composition of the oils, can hardly be doubted, from the comparisons of the several physical properties in the foregoing pages. The variations in specific gravity, optical rotation and solubility, are especially significant, since these properties bear direct relationship to the chemical composition of the oils. In some instances only were the constants of the oils within the limits of the Pharmacopœial requirements, yet the oils under observation were distilled with utmost care from material carefully grown and harvested, and therefore, must be considered as true, authentic samples.

DISCUSSION.

MR. ASHER: I would like to ask Dr. Stockberger whether other analyses have been made of these oils at various times, that is for instance, the oils made in 1907; whether analyses were made in 1910, and so on. My object in asking that question is this. I have done a great deal of work with the pinenes. We have examined, in the experiments we have conducted, these oils for solubility, refractive index and after several years found these possessed differen constants from those found when previously tested and no doubt the oils taken as standards by the pharmacopœia were not taken from fresh samples, as in this case and very much of the difference of the constants is no doubt due to some changes due to time.

DR. STOCKBERGER: Yes, samples of these oils have been examined from time to time and in many cases they have been found to vary with time in respect to their constants. On the other hand the figures shown in these tables were obtained from freshly distilled oils, and are presented to show the variations in these oils according to the season in which they were produced.

MR. ASHER: Just one further question in that regard, Mr. Stockberger. Did the gentleman who did the work later test these samples and did they then correspond wtih the samples in the pharmacopœia?

DR. STOCKBERGER: I am unable to answer that absolutely, because it is a special point with reference to the author's work which I am not sufficiently well acquainted with, to enable me to make a categorical answer. The intent of the author of this paper is to show that absolutely authentic material was worked with and that it is quite possible to have an authentic oil which does not conform to pharmacopœial requirements.

MR. CHARLES T. P. FENNEL, of Cincinnati: Were the oils ever tested for moisture?

DR. STOCKBERGER: Yes, sir. The oils were dry.

MR. FENNEL: You are sure of that? I made a series of experiments a good many years ago, and I claim that quite a number of these oils contained water. I recall very distinctly the oil of cloves contained two percent. water. My claim for content of water was denied

by manufacturers of volatile oil, especially one, but years afterwards the sample in question was picked out of the list presented and the distiller admitted it contained two percent. of water. The records of the Association gave the data but I am not able to recall the time it was published.

MR. STOCKBERGER: I know it has been Mr. Rabak's custom in working with these oils to take all precautions, so far as possible, to remove moisture from the oil. Whether it was absolutely removed or not, of course, it is impossible for me to say, but I know that is my impression, that they were moisture free samples.

NOTES ON A NEW ALKALOID FOUND IN NUX VOMICA.*

HUGO H. SCHAEFER.

We find from time to time in pharmaceutical literature, reports of the discovery of new alkaloids in nux vomica beans, that is, alkaloids other than strychnine or brucine. In the Jour. Chem. Soc. (39-457), Shenstone reports the finding of an alkaloid freely soluble in warm water. After describing the substance, the author states that it is probably brucine with some persistent impurity. In the Pharm. Jour. (III, XIV, 1025) Dunston reports the discovery of a glucoside in nux vomica, which he terms loganin. Desnoir (Jahresbericht 50-54, p. 48) describes a new nux vomica alkaloid, which he calls igasurine. This, he claims, is an intensely bitter substance, giving tests entirely different from those of strychnine or brucine. Again, in Gmelin (XVII—589), we find that igasurine is a very bitter substance resembling brucine, but more soluble in water. Schutzenberg (Am. Jour. Pharm., 1858-535) reports that igasurine is really composed of nine different and distinct alkaloids. He separates these by fractional crystallizations and gives a brief description of each one. Finally we find, in Am. Jour. Pharm. (1872-256, Jörgenston), evidence that there is no such alkaloid as igasurine, or at least, that the substance so-called, can be readily converted into brucine, by treating with potassium iodide, filtering off and regenerating the alkaloid, which will be found to be brucine.

We therefore see, from the above contradicting statements, that it is an open question as to whether such an alkaloid as igasurine really exists. However, the author now wishes to report the finding of an alkaloid in nux vomica, which is totally different from strychnine, brucine, or any of the igasurines, as described in literature, and which alkaloid he proposes to call *struxine*.

This alkaloid makes its appearance during the process of manufacturing strychnine. In neutralizing the acid-solution of the raw alkaloidal sulphates of nux vomica, the new alkaloid separates out as a base, when the liquors become just neutral, or are still slightly acid, while strychnine and brucine remain in solution as sulphates. It was found that only few lots of nux vomica beans contained this substance, and the quantities, in those which did contain it, differed greatly with different lots. Careful record was made of the beans which yielded this new alkaloid, and this proved that all such beans were from shipments made from Cochin-China. Those lots which consisted mostly of small beans, insect-eaten

* Read before Scientific Section at Detroit.

and partly decomposed by prolonged exposure in wet fields, contained the largest percentage of the alkaloid. The average amount found in these beans was 0.1%.

Struxine, which separates from the solution of raw alkaloids as above stated, was filtered off, dissolved in an excess of dilute sulphuric acid, made alkaline, and the precipitated alkaloid again filtered off. This was now purified by repeated recrystallizations from alcohol.

The final pure product, when freshly made, consists of colorless crystals containing no water of crystallization. Upon exposure to air and light, however, the crystals gradually develop a faint yellowish color. No melting point could be determined, as the substance begins to char at about 250° C. A solution of it gives typical alkaloidal reaction with gold chloride, platinum chloride, mercuric chloride, Bouchardat's, Marme's, Mayer's, Dragendorff's, Sonnenschein's, and Scheibler's reagents, and with tannic acid and picric acid. The alkaloid is only very slightly bitter, which lack of taste is probably due to its extreme insolubility in water, since the more soluble salts of *struxine* are distinctly bitter, but have not the intensity of either strychnine or brucine, or any of the igasurines, as reported in literature.

The following solubility determinations were made:—

In water 1-5000 cc.	In chloroform 1-1 2/3 cc.
In alcohol 1-190 cc.	In ether 1-450 cc.
In methyl 1-210 cc.	In benzol 1-35 cc.

Upon microscopical examination, it was found that the crystals are all of well-defined rhombic form. This, together with the fact that various attempts at fractional crystallization proved failures, shows that the substance is not a mixture of alkaloids, but is a uniform product.

The ultimate analysis of the alkaloid gave the following composition:—

	A.	B.	Average
C.	67.31%	67.11	67.21
H.	7.89	8.13	8.01
N.	7.62	7.44	7.53
O.	17.18	17.32	17.25

A careful determination by means of the freezing-point method, indicated that the alkaloid had a molecular weight of 371. From this data, it was calculated that the empiric formula of *struxine* is $C_{21}H_{30}N_2O_4$, which would give it a molecular weight of 374.53. As will be noted below, this molecular weight is between that of strychnine, and of brucine, and its formula in certain respects resembles that of strychnine and brucine.

	Empiric Formula	
Struxine	$C_{21}H_{30}N_2O_4$	374.53
Strychnine	$C_{21}H_{22}N_2O_2$	334.466
Brucine	$C_{23}H_{26}N_2O_4$	394.518

Because of these resemblances, it is thought that, possibly, the new alkaloid is a product of decomposition, by fermentation or oxidation of either strychnine or brucine. The fact that those beans which are insect-eaten and partly decomposed, contain more of the alkaloid than good beans, would also indicate this.

Various salts of *struxine* were made, and it was found that it forms normal and

acid salts. The latter, in most cases, however, only from a solution containing a very large excess of acid. All the salts react acid to litmus, and when these acid solutions were neutralized with ammonia water, the free alkaloid separated out, even while the solution showed still a faint acid reaction. No melting points could be obtained, since all these salts charred at 240°-250° C.

Among the salts made and examined, were the following:—

Sulphate—$(C_{21}H_{30}N_2O_4)_2H_2SO_4.8H_2O$.

This is a yellowish, crystalline salt, possessing a bitter taste, soluble in water 1-120, in boiling water 1-12, and in alcohol 1-100.

Bisulphate—$C_{21}H_{30}N_2O_4.H_2SO_4.1H_2O$.

This is a white crystalline salt, possessing a bitter taste, soluble in water 1-75 and in alcohol 1-210.

Hydrochloride—$C_{21}H_{30}N_2O_4.H\ Cl.3H_2O$.

This is a yellow crystalline salt, which with water, gives a golden yellow-colored solution, having a bitter taste. It is soluble in water 1-85 and in alcohol 1-75. The alkaloid does not combine with two molecules of hydrochloric acid, since even from a solution of a large excess of acid, the neutral salt is obtained.

Hydrobromide—$C_{21}H_{30}N_2O_4.H\ Br.2H_2O$.

This is a yellowish, bitter crystalline salt, soluble in water 1-115 and in alcohol 1-100. A di-hydrobromide could not be obtained even from a solution containing a large excess of hydrobromic acid.

Bitartrate—$C_{21}H_{30}N_2O_4.H_2C_4H_4O_6.2H_2O$.

This salt consists of white, glistening, flaky crystals possessing a bitter taste. Only the acid salt could be obtained. In attempting to make the normal salt, the theoretical quantities of acid and alkaloid in hot water, formed a product which was found to be a mixture of the alkaloid and acid tartrate. Upon using double the amount of tartaric acid, however, all the alkaloid went into solution, from which upon cooling, the acid tartrate crystallized out in beautiful flaky crystals, sparingly soluble in water or alcohol. These crystals, when dissolved in hot water, form a solution of strong acid character. If this solution is neutralized with ammonia water until neutral to litmus, no normal tartrate is obtained, but free alkaloid crystallizes out.

An attempt was made to obtain the acetate of the alkaloid. It was found, however, that no such salt could be obtained in crystallized form.

Many tests were made with the new alkaloid, in order to find characteristic reactions and possible resemblances to strychnine or brucine.

Among these reactions were the following:—

A. A small quantity of the alkaloid will give no color when a drop of concentrated sulphuric acid is added. If to this mixture, however, a crystal of potassium dichromate be added, a yellow color will be obtained, which slowly changes to green.

B. If to a small quantity of the alkaloid, a drop of concentrated sulphuric acid be added, and then a small particle of sodium nitrite, a dark brown color is obtained.

C. If to a small quantity of the alkaloid, a drop of concentrated sulphuric acid be added, and then a small particle of lead peroxide, a dark brown color is obtained, which slowly changes to purple, and finally to violet.

D. If to a small quantity of the alkaloid, a drop of concentrated sulphuric acid

be added, and then a small crystal of potassium ferricyanide, an orange color is obtained which changes to brown.

E. If to a small quantity of the alkaloid, a drop or two of concentrated sulphuric acid be added, and then a few particles of manganese dioxide, a brown color is obtained which slowly changes to purple.

F. A small quantity of the alkaloid will give a brown color, upon addition of a drop of concentrated nitric acid, which color does not change upon addition of a small quantity of zinc chloride.

G. If a small quantity of the alkaloid be dissolved in a few drops of nitric acid and the mixture evaporated to dryness, a light yellow residue remains behind. If this residue be dissolved in ammonia water, a reddish-colored solution is obtained. If alcoholic potassium hydroxide solution now be added, a red to brown precipitate is obtained.

H. If to a small quantity of the alkaloid, a few drops of aqueous solution of potassium hydroxide be added, and the mixture evaporated to dryness, a brown residue remains behind.

I. If to a small quantity of the alkaloid, a drop of a solution of stannous chloride be added, a yellow color is obtained.

J. If to a small quantity of the alkaloid, a drop of concentrated hydrochloric acid be added, a yellow color is obtained.

K. If to a small quantity of the alkaloid, a drop of alcoholic solution of potassium hydroxide be added, an orange color is obtained, which slowly changes to red and then to brown, and finally to black. This test can also be performed by treating the alkaloid with a drop of aqueous solution of potassium hydroxide, which produces no change in color. However, as soon as a drop of alcohol is now added, to the mixture, the above color-changes occur.

All the foregoing tests were made on watch-glasses, or crucible covers with the dry alkaloid. The following tests were made in test tubes, using a saturated aqueous solution of the sulphate:—

L. A small quantity of the saturated solution when treated with an equal portion of concentrated sulphuric acid gives a pink color. If now a particle of sodium nitrite be added, a red-colored solution is slowly formed.

M. The solution of the sulphate gives a yellow-colored precipitate, upon addition of a solution of picric acid.

N. Upon addition of an equal portion of concentrated hydrochloric acid to the saturated solution, no color is obtained even on heating.

O. Upon addition of chlorine water to the saturated solution of the sulphate, a yellow-colored mixture is obtained with no precipitate.

P. A heavy yellow precipitate is obtained from the solution of the sulphate upon addition of as little as one drop of bromine water.

Q. If a small quantity of the saturated solution be diluted with an equal portion of alcohol, and two or three drops of bromine water now be added, no precipitate appears and the solution remains colorless. However, if a large excess of bromine water be added, a yellow precipitate is formed.

R. If an excess of sulphuric acid be added to the solution of *struxine sulphate*, and sodium carbonate or bicarbonate be added in excess, a heavy white precipitate is formed, showing that the alkaloid is not soluble in a solution of carbon dioxide.

S. A solution of potassium chlorate, when added to the solution of sulphate, will cause no color-change or precipitation.

T. If to the saturated solution, a solution of potassium ferri-cyanide be added, a dense white precipitate is obtained.

U. If to the solution of the sulphate a solution of potassium ferro-cyanide be

added, an amorphous yellow precipitate is obtained. If an equal portion of alcohol now be added, the precipitate immediately dissolves.

V. Tincture of iodine, when added to the solution of the sulphate, gives a brown precipitate.

W. If to the solution of the sulphate, some alcoholic potassium hydroxide solution be added, the mixture slowly takes on a pink color, gradually changing into cherry, then red, and, finally, purple.

This test is characteristic of this alkaloid only, and therefore many modifications were tried, until the following was finally determined as being the sharpest and most definite:—

Y. If to the saturated alcoholic solution of the sulphate (1-100) an equal part of alcoholic solution of potassium hydroxide 10% be added, within one minute, the mixture will take on a cherry-red color, which turns darker upon standing. If to this colored mixture, four drops of alcoholic solution of resorcinol (1-100) be added, the color immediately changes to intense dark green. If alcoholic solutions of either hydrochinone, or anthra-quinone (1-100) be used in place of the resorcinol, the same green color will be obtained.

These experiments, reactions and descriptions prove conclusively that there is a third alkaloid in nux vomica, unlike any described in literature under the name igasurine. While studying the alkaloid, much more research work suggested itself to the author, and the results of some of it will be published in a later paper. Experiments will also be made to obtain the physiological reaction of *struxine*.

Laboratory N. Y. Quinine and *Chem. Works.*

LABORATORY NOTES.

GEORGE E. E'WE AND CHARLES E. VANDERKLEED.

In every laboratory where a large variety of work is being done, many observations are made from time to time, which are not of enough importance in themselves to be dignified by making them the subjects for scientific papers; yet they may be of interest and importance to workers in other laboratories. Under the title of "Laboratory Notes," therefore, we have collected a number of such observations of miscellaneous character, hoping that they may prove to be of interest to members of the Scientific Section, and that they may prove to be a step in the direction of encouraging, at our meetings, the mutual exchange of laboratory ideas.

Criticism of U. S. P. Directions for Making Decinormal Iodine Solution:— The U. S. Pharmacopœia directs, in making N/10 Iodine solution, to

"Dissolve 12.59 gm. pure iodine in a solution of 18 gm. of potassium iodide in 300 cc. water."

This procedure of making the solution, requires from one to three hours. A great saving in time may be effected by cutting down the amount of water to about 40 cc. By this modified method, the solution may be prepared in about 10

minutes, and will be found to be quite as accurate as a solution made by the longer process, as is shown by the following experiments:—

Method	Time Required	Factor of the N/10 Solution
U. S. P. procedure	3 hours	1.000
Short method, diluted after 10 minutes	15 minutes	1.001
Short method, allowing to stand 1 hour after iodine is dissolved	1¼ hours	1.001

Note on U. S. P. Method of Assaying Solution of Lead Subacetate:—In this assay, the U. S. Pharmacopœia directs that an aliquot part of the solution be taken for titration of excess of oxalic acid, after allowing the precipitate to settle. To insure freedom from the lead precipitate and to effect a saving of time, filtration of the mixture is advisable. The mixture may be filtered without waiting for the precipitate to settle.

Note on the U. S. P. Assay of Nux Vomica for Strychnine:—In the assay for strychnine, the U. S. Pharmacopœia directs the filtration of the final chloroformic extractions containing strychnine, in order to prevent the carrying over of some of the fixed alkali used to liberate the alkaloid. This filtration of the chloroform is not always productive of perfect results, since the filtered solutions sometimes still contain traces of fixed alkali. In four experiments, the extra precaution of washing the united chloroformic extractions with 10 cc. water resulted in reductions of 1.9%, 1.1%, 1.8%, and 2.3% of the total strychnine apparently present.

Assay of Tincture Ferric Citro-Chloride N. F.:—The National Formulary provides no methods of assay or control for N. F. preparations, each laboratory being obliged to provide its own methods for their control. We have found the U. S. P. method for the assay of Tincture of Ferric Chloride is applicable to this tincture with fairly accurate results. The presence of the citric acid does not materially interfere with the oxidation of the iron to the ferric state nor the subsequent reduction to ferrous iron by the hydriodic acid. Experiments on samples which contained known amounts of iron returned on the average, 98.5% of the iron present, by this method.

One sample of Tincture Ferric Citro-Chloride came under our observation, which contained a large precipitate consisting of a complex double salt of iron and sodium citrate. The precipitate contained about 50% of the iron present.

Determination of Chromium in Presence of Acacia:—Oragnic substances generally interfere with the precipitation by ammonia, of members of the iron group, to which chromium belongs. Chromium sulphate occurs in the market in the form of scales, which, with the assistance of a binder such as acacia, may be readily compressed into tablets. In attempting to assay chromium sulphate tablets containing 10% of acacia, it was found that the chromium could be precipitated quantitatively as hydroxide by ammonia, without interference from the acacia. On the other hand, acacia prevents the precipitation of iron. The possibility of a new method for the separation of iron and chromium, is also suggested by this observation.

Detection of Nitric Acid in Lime Juice:—Although nitric acid is a very infrequent adulterant in lime juice, its detection, when present, presents difficulty, since most of the tests for nitric acid are color-reactions, in which concentrated sul-

phuric acid is used, and the latter carbonizes the organic matter present, thus obscuring the color-reaction. The following method, which has no such objection, will readily detect 0.1% of nitric acid in lime juice.

Place 5 cc. of lime juice, 5 cc. of 20% of potassium hydroxide solution, and about 0.5 gm. of granulated aluminum in a test-tube loosely stoppered with cotton. Heat on steam-bath for 10 minutes. No odor of ammonia should be noticeable during that time, indicating absence of nitric acid.

Interference of Aniline Colors in Alkaloidal Assays:—We have occasionally found on the market alkaloidal preparations, such as Powdered Extract Stramonium, containing a green aniline dye to simulate the natural color of the leaf. In attempting to assay such extracts we have found that the green color appears in the alkaloidal residue which is to be titrated. Besides obscuring the end-reaction, some of these colors are basic in character and increase the apparent amount of alkaloid present. In one specimen which we examined, the color present increased the apparent amount of alkaloid present to the extent of 24%. The interfering color can usually be eliminated by extracting the acid solution of the alkaloids, with chloroform or other suitable solvent, before making alkaline for the extraction of the alkaloids.

Occurrence of Guaiac Resin in Scammony Resin:—Alcoholic solutions of scammony resin, occasionally give a blue coloration with ferric chloride, indicating the presence of guaiac resin. This test, which is given in the U. S. Pharmacopœia under Scammony, should be repeated under Resin of Scammony.

Physical Instability of Mercurial Ointment:—Because of the high specific gravity of metallic mercury, mercurial ointments are subject to a settling of the mercury to the bottom of the container. In one instance, a 50% ointment was examined which assayed 75% mercury when sampled from the bottom. It would be well to include in the U. S. Pharmacopœia, directions to "mix well before dispensing."

Influence of Method of Manufacture on Composition of Compound Solution of Cresol, U. S. P.:—When prepared by the cold process, exactly as prescribed by the U. S. Pharmacopœia, a lot of Liquor Cresolis Comp. assayed 8.5% water and 48.5% phenols by the methods of assay given in Bulletin 107, Bureau of Animal Industry, U. S. Department of Agriculture. When prepared by the more satisfactory method of heating to saponify the linseed oil and dissolving the resultant soap while hot in the cresol, many lots manufactured ranged from 5 to 8.6% of water and from 48 to 50% of phenols.

Volatility of Caffeine and of Acetanilid in a Current of Steam:—Having occasion to separate monobromated camphor from a tablet-mixture containing among other ingredients caffeine, the mixture was distilled with steam. Caffeine was found along with the monobromated camphor in the distillate. To determine to what extent the caffeine was volatilized under the conditions employed in the separation of the monobromated camphor from the tablet-mixture, 1 gm. of caffeine was distilled with steam until a 500 cc. distillate was obtained. 0.8% of the caffeine was recovered from the distillate.

Acetanilid is also slightly volatile in a current of steam, and as was expected, the volatility is somewhat greater than that of caffeine. An experiment resulted

in 3% of the acetanilid being found in the distillate, when 2 gm. was distilled with steam until a distillate of 500 cc. was obtained. In a second experiment, using 1 gm. of acetanilid, 2.4% was found in the distillate.

Determination of Free Phosphorus in Rat Pastes:—The following method works well with phosphorus rat pastes:—Take a sample of about 1 gm., place in a distilling flask connected with a CO_2 generator and a condenser, and connect the condenser with a 300 cc. Erlenmeyer flask containing 50 cc. of 3% silver nitrate solution. Connect the flask with a series of two U tubes containing 3% silver nitrate solution. All connections exposed to the phosphorus must be of glass or of cork covered with plaster of paris. Pass CO_2 through the apparatus for 20 minutes, testing for leaks with flexible collodion, which will bubble at a leak. Place 125 cc. of cold, freshly boiled, distilled water containing 2 cc. of sulphuric acid in the flask containing the sample by means of the tube which leads to the CO_2 generator. Continue to pass in CO_2, and heat the flask gently until, after about three hours, practically all of the liquid in the flask has been distilled into the silver nitrate solution.

Finally, allow the condenser to become hot from the distillation, and disconnect between generator and distillation flask before removing flame. Collect all the silver nitrate solutions in the Erlenmeyer flask, using nitric acid to dissolve the black precipitate in the U tubes. Add 15 cc. of nitric acid to the mixture, boil for five minutes, and add hydrochloric acid, in moderate excess, to precipitate the silver. Boil for 20 minutes, let cool, filter, and concentrate to 150 cc. Cool to 40° C., add 100 cc. ammonium molybdate solution, stir well, and let stand in warm place over night. Filter off clear liquid, wash precipitate by decantation, using 25 cc. water for each washing, transfer to filter, and wash until two fillings of the funnel are rendered pink by one drop of N/2 potassium hydroxide solution, using phenolphthalein as indicator. Place the filter and precipitate, in a glass-stoppered flask, add an excess of N/2 potassium hydroxide solution, shake for a few minutes, add phenolphthalein indicator, and titrate back with N/2 sulphuric acid. Each cc. of N/2 potassium hydroxide solution, is equivalent to 0.0007071 gm. phosphorus.

This method is also applicable to the assay of phosphoretted resin and phosphorus tablets, for free phosphorus. Three samples of commercial phosphorus rat-pastes, were found to contain respectively 57.9%, 41%, and 82%, of the claimed amounts of phosphorus in free condition.

Note on Charging Melting-Point Tubes:—The usual method of taking melting-points involves the use of a capillary melting-point tube, sealed at one end. This type of tube presents the difficulty of requiring the shaking down of the sample, into the closed end of the tube. A capillary tube open at both ends is far more convenient. It may be charged with the sample, to the depth of about one-fourth inch, merely by pressing the end of the tube into the powdered substance in the manner of filling capsules. The tube may then be attached to the thermometer in the usual manner, and used the same as a tube closed at one end. In all our experience with this open capillary tube, the melted sample has always been retained within the tube by capillary attraction. This type of tube permits of the employment, if desired, of a finer capillary tube, as the sample does not

have to be shaken down. It is unnecessary to say, of course, that these tubes can only be used in a melting-point apparatus provided with an air chamber, such for example, as Roth's, they could not be submerged in a water or acid bath.

Lead Storage-Tanks for Pharmaceutical Preparations:—In investigating the suitability of lead-lined storage-tanks for pharmaceutical preparations, the following observations were made:—Tincture of Opium, and Syrup of White Pine Compound, dissolve lead; Tincture of Aconite and Fluid Extract of Ergot, do not permanently dissolve lead, but form precipitates containing lead; Tincture of Vanilla and Aromatic Fluid Extract of Cascara Sagrada, dissolve lead and also form precipitates containing lead.

Note on Soft Gambir:—The U. S. P. requires that gambir be friable, that it contain not less than 70% alcohol-soluble matter and not more than 5% ash. Gambir, when soft, contains excessive water, which is included as alcohol-soluble matter. If the amount of soft gambir used in a formula, is corrected for its excessive water, soft gambir may be used, in place of the friable gambir required by the U. S. P. The point to be considered is the maximum amount of water which gambir may contain and retain its friable condition.

In order to determine this point, a flat cake of soft gambir was alternately heated at 100° C. for fifteen minutes, and then cooled, and the condition of the gambir ascertained when cool. Under these conditions, the gambir became friable when it contained 5.3% of water. This figure, however, was not consistent with the moisture-content of spontaneously-dried, commercial, friable samples, which contained as much as 12% moisture. It is evident, therefore, that the maximum content of water consistent with a friable condition, is variable according to the method of drying. The commercial method of drying gambir, is the spontaneous one, so that the determination of the maximum content of water consistent with a friable condition, should be based on spontaneously-dried commercial samples. The maximum moisture in the samples of friable gambir, which we have examined up to the present, is 12%. The minimum moisture in the samples of soft gambir which we have examined up to the present, is 21%. The proper maximum-content of water in gambir, consistent with a friable condition, to adopt as a standard, should be that which we have found in practice and which is 12%. In valuing soft gambir, the moisture, alcohol-solubility, and ash should be determined and only 12% of the moisture should be calculated as alcohol-soluble matter.

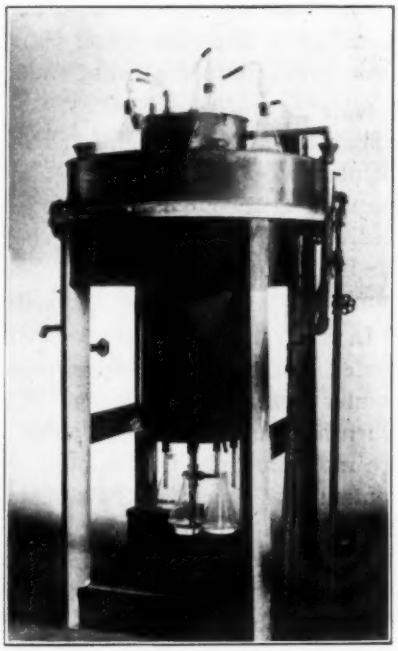
As an illustration, we will consider a soft gambir which assays 25.4% moisture and 74.2% alcohol-soluble matter. The moisture in excess of the 12%, consistent with a friable condition, is 13.4% which should be subtracted from 74.2% alcohol-soluble matter, leaving 60.8% alcohol-soluble matter, exclusive of excessive water for the gambir, intsead of the 70% which the U. S. P. requires, thus indicating that 116 parts are equivalent to 100 parts of U. S. P. gambir.

Gambir labeled as catechu, is always friable and for catechu and friable gambir, this method of calculating is not called for. These should assay not less than 70% alcohol-soluble matter and not more than 5% ash. There may be some slight objection to the use of soft gambir on the score of its diluting the menstruum and therefore changing the character of the extractive a trifle. But this

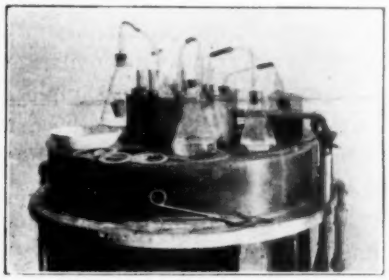
is not likely, as the chief medicinal ingredient is tannic acid and tannic acid is quite soluble in both water and alcohol.

An Improved Form of Steam Bath:—A circular steam bath containing the usual steam coil, constant water-level, openings with accommodating-rings for various-sized apparatus, etc., and with the additional arrangement of having an upright condenser placed in the center of the bath, has many advantages over the usual rectangular-shaped steam-bath without condenser.

The circular steam-bath requires no special explanation, but the upright condenser may be described as follows:



The condenser consists of two cylinders, one within the other, with glass tubes for condensing purposes placed in the space between the two cylinders. These cylinders contain the water used for condensing purposes,—the water entering the inner cylinder at the top, passing through holes in the bottom of the cylinder in to space between the two cylinders,



where it comes in contact with the condensing tubes, and then, passing up through the outer cylinder to the overflow near the top. The inner cylinder is designed for use with ice, when weather conditions require its use.

Flasks containing light solvents, are connected, for the process of distillation, with small spray traps, by means of corks which have been extracted with the kind of solvent undergoing distillation. The spray traps, in turn, are connected with the condensing tubes by means of short pieces of rubber tubing. To prevent loss of substances due to sudden boiling, it is desirable that the inner bottoms of the flasks be scratched with a diamond, taking care not to cut deeply into the glass.

This type of steam-bath has the advantages that it is always ready for the recovery of small quantities of volatile solvents, without the necessity for setting up distillation-apparatus; cold condensing can be conveniently carried out; the apparatus is compact; breakage, such as is common with glass condensers of the ordinary unprotected type, is prevented; the recovery of light solvents, which can be repeatedly employed for the same class of work is encouraged; and finally it may be used as an ordinary steam-bath, when the condensing arrangements are not required.

Cuts of the apparatus accompany this description.

ANALYTICAL LABORATORY, H. K. MULFORD COMPANY, July 29, 1914.

Editorial

ERNEST C. MARSHALL, Acting Editor.....63 Clinton Building, Columbus Ohio

Yuletide.

NOW comes the season of rejoicing. The Day of all Days, when, one and all, the entire Christian people of the earth, join in praise of the Lord of Lords, the King of Kings. The day when every one seems to try to make another glad of life, and the day from which we learn the veritable truth of the saying, "It is more blessed to give than to receive," and find more joy and peace in being kind, true and loving than in being unkind, false and insincere. Would there were more such days. Would that every day, the world's people thought of how they could lift the burden from some fellow-mortal and relieve their wants and their sorrows. How strange that with the joys and memories of one such day to abide with us, there cannot be seen how much better this world would be, if all days were like this one, full of joy and helpfulness to others.

What a different world this Cosmos would be if all, should from to-day, make their best endeavor to free themselves from meanness, from deceit, from wrong and cruel ways. Burns sings to us,—

"Man's inhumanity to Man
Makes countless thousands mourn."

when just simply Man's kindness to his fellow-men would make the world a place so joyous, that it would be a foretaste of the Heaven to which we all aspire. A MERRY CHRISTMAS! WHY? Why not a year of Merry Christmases? Why should we make but one, the sum and total of all our aspirations for a kinder and more generous life; then like the dog of Peter II, 22, turn to that by which we are degraded and defiled? *"Love ye one another,"* taught the Great Teacher, whose birth and life we celebrate this day. Not this for one day, but for every day.

We pharmacists follow Galen, *"The Paradoxopœus,"* (The Wonder-worker). Let us be wonder-workers in the world, and do our simple part to make it happier and better. In Italy the beggars greet you with *"Fate ben per voi"* (Be good to yourselves) in asking alms. Let us then seek our own good by doing good to others, and thus maintain the humanity, the worth of our high profession, devoted to the alleviation of the miseries of mankind; not alone the physical, but the mental and the spiritual as well. Thus will we honor our calling and make the name and the profession of Pharmacy revered and honored in the land.

The Journal wishes to every member A Most Merry Christmas!!

E. C. M.

A PLAIN DUTY.

WHAT Professor Kauffman called attention to at the last meeting of the Columbus Branch,—the use of the sodium salts in place of those of potassium,—is one of particular importance to every person, especially to pharmacists.

The supply of sodium in this country is practically inexhaustible, while we are almost entirely dependent upon Germany for potassium, and this fact accounts for the sharp advance in the prices of potassium salts, which will probably be accentuated if the war continues.

Salts of potassium and sodium, are presumed to derive their medicinal value from their combination with their radicals, not from their bases. The iodides and bromides of sodium and potassium have like medicinal uses, and are usually administered because of the iodine they contain, and the slight difference between them in this regard is in favor of the sodium salts. The latter are even preferred by many practitioners.

Merck's Report says:—

"Medicinally, in fact, the sodium salts are even believed to be superior to the potassium salts, because the consensus of opinion accredits the potassium ion with a depressing action on the central nervous system and heart, while the sodium ion is perfectly inert or indifferent. This view is so widely held that many physicians, particularly abroad, prefer the sodium salts (bromide, iodide, etc.,) to the potassium salts, and invariably prescribe them. This fact has not, however, been impressed upon the greater number of physicians, who largely follow traditions in prescribing, and who perhaps are not fully familiar with the sodium salts and their doses."

If physicians were informed on these points by pharmacists, there would doubtless result a greater use of the sodium salts and a lessened one for those of potassium. The doses of the most commonly used salts of these bases are practically identical,—of the iodides and bromides exactly the same. It would seem, therefore, as though it were the performance of a plain duty to the public and to themselves, for druggists to recommend to physicians the use of the salts of sodium instead of those of potassium. At the same time, they would be assisting to render the country independent of any interference with its medicinal supplies, such as has been caused by the existing war in Europe. E. C. M.

RETAILERS IN THE AMERICAN PHARMACEUTICAL ASSOCIATION

THOUGH not unfriendly in tone, an editorial in the November number of the Western Druggist entitled "Retailers in the American Pharmaceutical Association," is based upon a false assumption and therefore leads to a wrong conclusion.

An assertion, admittedly made "during a somewhat acrimonious debate" at the last N. A. R. D. convention, affords very slender support for such a sweeping premise as that "a majority of the members of the A. Ph. A. consist of pharmaceutical teachers, pharmaceutical editors, representatives of various departments of wholesale and manufacturng houses and the retired lists of these various interests."

An inspection of the roster of the A. Ph. A. members, quickly disproves this assertion. An actual count of the members in Massachusetts shows that 130 out

of 151 members of that state are engaged in the retail drug-business as proprietors or clerks.

The Chicago Branch, which includes in its membership representatives of the faculties of four schools of pharmacy, as well as a liberal number of chemists, manufacturers, wholesalers and journalists, shows, nevertheless, a decided preponderance of practicing pharmacists among its members. In the smaller cities and throughout the country the percentage of retail pharmacists is of course much greater than in the large centers of industry.

True, many of the most active members of the A. Ph. A. are not engaged in the retail drug business, but more than a few of these are qualified pharmacists notwithstanding. Further, it is to be expected that teachers, journalists, chemists, wholesalers and manufacturers *should* take an active part in the work of the A. Ph. A. More commonly than the retailer, they have the ambition, the time and the training which leadership requires. The strength of the A. Ph. A. lies in no small degree in its ability and opportunity to avail itself of the talents of such men.

The inference, that the Journal of the A. Ph. A. has been a failure is likewise refuted by facts. The Journal has been and is a success—a success not to be measured in the dollars of advertising receipts—especially as the cautious and conservative policy of the Association, does not permit of the acceptance of much of the advertising ordinarily carried in most of the trade journals.

That the Journal has materially helped to increase the membership of the Association may be determined by a comparison of the rate of growth for the nine years before and since the establishment of the monthly. In 1896, the total membership was 1558. Nine years later it was 1776, an increase of 14 percent. The Bulletin, as the Journal was first known, was inaugurated in 1905. During the following nine years—to 1914, the membership increased nearly 50 percent., passing the 2600 mark at the last convention. W. B. DAY.

OLIVE CROP OF TUSCANY.

The olive crop of 1914-15 for all of Tuscany is estimated to average, with a tendency to increase, the 1913-14 crop, which, according to last statistics, produced 1,064,000 quintals (106,400 tons) of olives, producing 197,000 hectoliters (5,204,159 gallons) of oil.

The cold winter and dry summer, though having somewhat reduced the very promising crop as to quantity, have much prevented the development and spreading of the olive fly (*Dacus olcaria*) and other parasites, and the quality of oil is expected to be superior to that of 1913 as a result.

Very little oil of the 1913-14 crop is still on the market—estimated as not exceeding 5 to 6 percent. of the total production.

The oil from the 1914-15 crop will not be on sale until December or January next, and prices (purchases from the producer) are expected to be about as the last quotations, viz., per 100 kilos (220.46 pounds), 200 lire ($38.60), for first quality; 180 lire ($34.74), second quality; 150 lire ($28.95), third quality; and 105 to 115 lire ($20.26 to $22.19), for industrial purposes.—Consul Benjamin F. Chase, Leghorn, Oct. 13.

Section on Education and Legislation

Papers Presented at the Sixty-Second Annual Convention

A FORM OF LAW PROPOSED FOR THE REGULATION OF THE ITINERANT VENDING OF DRUGS, MEDICINES AND POISONS.*

J. H. BEAL, SC. D.

The regulation of the distribution of drugs, medicines and poisons by unqualified itinerant vendors is a subject of perennial interest.

Pharmacists and physicians are naturally indignant at the discrimination of the law which imposes many burdensome conditions upon the conduct of their respective callings, but permits itinerant vendors to sell without let or hindrance, not only the so-called domestic or household drugs but also any other combination of drugs, provided their vendors are adroit enough to clothe them with some fanciful title not found in the United States Pharmacopœia or National Formulary.

This discrimination bears with especial hardship upon the pharmacist located in the small town or village. The law requires him to be especially educated for his business, and to be registered by examination. His goods are subject to both Federal and State inspection, and he is liable to severe penalties if they are deficient in quality. He is specially taxed for the enforcement of the laws regulating the practice of pharmacy, in addition to the tax which he pays for the maintenance of the government of the local community. It is small wonder, therefore, that he raises a protest when he sees his business taken away from him by itinerant vendors who contribute nothing to the support of the community in which they do business, who are not qualified by education to judge of the character of the products which they offer for sale, and which products are frequently dangerous to life and health, and still more frequently are of inferior quality.

Numerous efforts have been made to enact legislation restraining or regulating such itinerant vending, and occasionally acts for that purpose have been placed upon the statute books, but have generally been declared void by the court of last resort when attempts have been made to enforce them.

The fault of such attempted legislation has been that it has almost invariably tried to accomplish too much. Under the guise of regulation, it has imposed conditions that practically would have amounted to extermination: and under the pretense of protecting the public health has really attempted to legislate against the business of the man whose store was upon wheels in favor of the business of the man whose store occupied a permanent location. To make such legislation

* Read before the Section on Education and Legislation, at the 61st Annual Convention, Nashville, Tenn., 1913.

valid there must be a logical connection between the requirements which it imposes, and the general public good, and not merely the particular good of the retailer who has a fixed place of business. If this connection with the public welfare be plainly shown, then such legislation will stand a good chance of being sustained by the courts, even if it shall amount to practical prohibition of the itinerant vending of drugs and medicines.

In other words, the only warrant for the imposing of special requirements upon the itinerant vendor of drugs and medicines is the necessity of protecting the public against the sale of fraudulent or dangerous preparations or the collection of necessary taxes; and this necessity must be real and in line with the requirements imposed upon the non-itinerant vendors of the same class of articles, and must not be designed merely to interfere with the business of those who travel from place to place in favor of the interests of those who do business in one place.

The following is proposed as a form of law which the writer believes meets most of the constitutional objections which have been offered to such legislation in the past, and at the same time provides the means of bringing under proper control and subjecting to proper regulations, a variety of itinerant traffic, which without proper regulation, is likely to be dangerous to public health besides being unfair to the qualified and registered pharmacist and physician.

The form given below would, of course, need modification to fit it to local conditions in the states when it was proposed for enactment, as for example, by substituting the name of the state official charged with the enforcement of the food and drug laws, where these are not enforced by the state board of pharmacy, etc.

A BILL

To regulate the itinerant vending of medicines, and nostrums, and of compounds and mixtures containing dangerous or habit-forming drugs, and to provide for the licensing of vendors of the same.

Be it enacted by the General Assembly of the State of .....

Section 1. Any person, firm or corporation desiring to engage, either as principal or as agent, in the business of selling, or vending by peddling, or by canvassing from house to house, or by vending from valise, pack, bundle, wagon or other vehicle, or by public out-cry, or upon the street or public highway, any drug or medicine, or any combination or mixture of drugs and medicines recommended for the cure, treatment or mitigation of disease, injury or deformity, either of man or other animals, shall apply to the state [board of pharmacy] for a license, or for a certified copy thereof, as provided in section two of this act, authorizing such peddling, canvassing, selling or vending.

Every application shall be in the form prescribed by the state [board of pharmacy] and shall particularly set forth the drugs, medicines, or combinations or mixtures thereof desired to be vended or sold, and shall be accompanied by samples of such drugs, medicines, combinations or mixtures, sufficient in quantity for analysis, the quantity to be such as may be determined by the state [board of pharmacy] and by a true statement of the quantity or proportion of any alcohol, opium, morphine, codeine, heroin, or cocaine, or of any salt, alkaloid, derivative, preparation or compound of any such drugs contained therein, and by copies of the circulars, labels or other printed matter by which such articles are to be accompanied or advertised.

If the state [board of pharmacy] is satisfied that such application is in the proper form and that the drugs, medicines, combinations or mixtures proposed

to be sold or vended do not contain poisonous or habit-forming drugs in greater proportion than is permitted by law, or alcohol in greater proportion than is necessary to preserve or hold the essential ingredients of such drugs, medicines, combinations or mixtures in solution, and that such preparations cannot be used as alcoholic beverages nor to create or satisfy a drug habit, and that they are not dangerous to life, or health, nor intended for unlawful or immoral purposes, and that the circulars, labels or other printed matter by which such articles are to be accompanied or advertised do not contain any statements that are false and fraudulent, [the State Board of Pharmacy] shall upon receipt of the fees hereinafter described, cause to be issued to such applicant a license authorizing the selling, peddling or vending of such drugs, medicines, combinations or mixtures thereof.

Such license shall particularly describe the drug, medicine, combination or mixture authorized to be sold thereunder, the name of the person, firm or corporation to which the license is issued, the date when such license expires, and shall be signed by the [Secretary of the state board of pharmacy].

Nothing in this or in any other section of this act shall be construed to affect the operation of any provision of law regulating the practice of pharmacy, medicine, dentistry or veterinary medicine, or regulating the sale of alcoholic liquors, habit-forming drugs, or of food and drugs, nor shall it be construed to suspend or avoid the operation of any legal ordinance of any municipality regulating the itinerant vending or peddling of drugs, medicines or other articles.

Section 2. The state [board of pharmacy] shall be authorized to charge and collect the sum of ten dollars ($10.00) for each such license, and if the sale of more than one drug, medicine, compound or mixture is authorized thereunder, they shall be authorized to charge and collect the sum of one dollar ($1.00) for each additional drug, medicine, compound or mixture. No person, firm or corporation shall be required to procure more than one license for the sale of any preparation, but each agent shall be required to carry with him the license obtained by his principal, or a certified copy thereof, and to produce the same for inspection when requested to do so by any officer of the law, or by any inspector of the state [board of pharmacy] and when more than one agent or canvasser is employed by any person, firm or corporation, the state [board of pharmacy] shall furnish certified copies of such license for each of such agents or canvassers and shall be authorized to charge the sum of one dollar ($1.00) for each copy thereof. No license shall be issued for a longer period than one year.

The state [board of pharmacy] shall cause a record to be kept of the licenses issued under this act, to whom issued and of the dates of expiration thereof, which licenses shall be consecutively numbered, and all drugs, medicines, combinations or mixtures thereof, authorized to be sold or vended thereunder shall bear a label upon which is printed in plain and easily read letters the words, "Sale authorized by [name of state] License No. ———," accompanied by the serial number of such license and the date when such license will expire.

Section 3. Any person, firm or corporation, who, either as principal or agent, shall sell or offer for sale, by peddling, or by canvassing from house to house, or by vending from valise, pack, bundle, wagon or other vehicle, or by public outcry, or upon the street or public highway, any drug or medicine, or any combination or mixture of drugs or medicines recommended for the cure, treatment or mitigation of any disease, injury or deformity, either of man or other animals, without first having obtained a license from the state [board of pharmacy] as hereinbefore provided, or any one who in any application for license under this act shall state falsely the composition of any drug, medicine, combination or mixture, or when vending by public out-cry shall make or utter any statement regarding the articles offered for sale which shall be false or misleading, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not less than fifty

dollars ($50.00) nor more than two hundred dollars ($200.00) for the first offense, and on any subsequent conviction for the same offense shall be fined not less than two hundred dollars ($200.00) nor more than five hundred dollars ($500.00).

All licenses and other fees and all fines collected under this act shall be paid to the state [board of pharmacy] and by [them] shall be paid into the state treasury, where they shall be disposed of according to law.

Section 4. It shall be the duty of the state [board of pharmacy] to administer the provisions of this act, to investigate charges of violation of any of the provisions, to prosecute or cause to be prosecuted any person, firm or corporation guilty of such violation and to make such proper and lawful regulations as may be necessary to carry the provisions of this act into effect.

In case it is desired to regulate also the itinerant practice of medicine, the writer suggests the insertion between Sections 2 and 3, of another Section something like the following:

Section 3. Any physician or person having or claiming authority to practice medicine under the laws of this state, and who, not being a legal resident, shall desire to begin or continue the itinerant practice of medicine in this state, shall first obtain authority so to do from the state board of health which (or who) upon proper application in writing may issue a permit for such practice covering a period of one year from date upon the payment of a fee of ..... dollars and the filing of a bond for ..... with good and sufficient sureties residing in this state, to insure against the improper performance of medical service.

Any physician having or claiming authority to practice medicine under the laws of this state, and who being a legal resident of this state, may desire to begin or continue the itinerant practice of medicine may obtain a permit in the same manner as prescribed for a non-resident, but shall not be required to file the bond described in this section.

The state board of health shall upon a proper showing of authority of the applicant to practice medicine in this state, and upon the performance of the other acts named herein, issue the permit for an itinerant physician, provided no permit shall be issued to such physicians as offer to treat diseases of a venereal nature, nor to any physician of known immoral character or intemperate habits.

The state board of health shall at once revoke the permit of any itinerant physician who shall be proven to be of immoral character or intemperate habits, or who shall offer to treat diseases named herein, and in the event of such revocation no portion of the fee paid shall be refunded.

The words "itinerant physician" within the meaning of this act shall be deemed to mean any physician who being a non-resident of the state shall practice medicine from place to place within the state and who shall offer his services in the various localities through public advertising of any nature, or by word of mouth in any street or public place, or who being a resident of this state shall so practice or advertise outside of the county of his legal residence.

The provisions of this section shall apply to any physician so practicing or advertising whether acting as principal, agent or employee.

Each itinerant physician shall carry with him his permit for the current year and shall produce the same for the inspection of any officer of the law or any agent of the issuing authority.

DISCUSSION.

Mr. F. H. Freericks, of Cincinnati, said he desired to express his pleasure at having been present at the meeting a year or two ago of the Academy of Medicine and Ohio Valley Druggists Association of Cincinnati, where Mr. Beal had discussed this question of the itinerant vendor. It became apparent at that time that the physicians were equally interested with the pharmacists of the country in this question, and, subsequent to that meeting, he had met

some fifteen or twenty of the prominent physicians of Cincinnati, who had been present at the meeting, who assured him—and possibly through him the Association—that any effort of this kind would have their very hearty approval. A bill had been introduced at the last session of the Ohio Legislature which, to a great extent, embodied the views here expressed by Mr. Beal. He agreed with Mr. Beal that any effort in this direction must be based primarily on the public good and welfare; it could not be a question of what was best for the druggist, but must always be a question of whether it served the public welfare. He expressed the hope that some method might be found by the author of this bill under which it would be possible to make it applicable to the unqualified vendor, who had a fixed place of business, as well as to the unqualified vendor who traveled around, because there was some doubt as to whether a distinction made as to the itinerant vendor that was not applicable to the vendor at a fixed place, would be constitutional.

Mr. Nixon thought one of the strongest assets the itinerant vendor had was in that clause of the Pure Food & Drugs Act allowing a multiple standard. In his section of the country they had found that these vendors were selling tincture of iodine containing three per cent., which the law allowed. He had a customer to whom he had sold tincture of iodine to bring it back because it stained (!) his hand. It was easy to see where he had been buying the article. He had had physicians tell him the same thing, that they were able to obtain tincture of iodine which would not stain the skin, and that their patients preferred it. Another instance was peppermint. He thought the percentage of essence of peppermint, which was 10, was too high. A lady had brought him back a bottle not a great while ago, saying she had given her child a teaspoonful of this essence of peppermint, and it had nearly strangled the child. She had been buying of an itinerant vendor, and he requested her to bring him the bottle, which she did, and he found it contained only 2½ percent. of oil. Personally, he expressed himself as being strongly in favor of the single standard for Pharmacopœial preparations.

Mr. Cassaday said that, in Indiana, they had had quite an experience at Indianapolis, at the last session of the Legislature, in getting their narcotic law passed. When it began to be apparent that the bill was to be enacted into law, the question arose as to where the authority to enforce its provisions should lie. Some contended that the Board of Pharmacy was the proper authority, others that it was the Board of Health. The Press took the side of the Board of Pharmacy, as it had control of the sale of medicines, and argued that it was rather out of the sphere of the Board of Health. As had been suggested here, these itinerant vendors were becoming "drug-stores on wheels." The question was, who was going to look after the enforcement of the law as to the sales of medicine and the licensing of those who should sell medicines in the State? Was this authority to be turned over to the Board of Health? It was generally conceded that these boards had enough to do already, and he was ready to enter his protest against any supervision of the sales of medicines in any way by the Board of Health. Druggists were the people best qualified to do this. He thought this could be properly regarded as a matter pertaining to the public health, which should properly be administered through the Board of Pharmacy. If not, druggists might as well turn the matter over to some other association that knew less or nothing about it. He thought the people themselves should make it their business to study and know about these things.

GOVERNMENT AID TO FRENCH CHEMICAL INDUSTRIES.

The French Government, by presidential decree, created a special bureau in the Department of Commerce, for the duration of the war, charged with matters touching the production and supply in France of chemical and pharmaceutical products.

The decree (see Journal Officiel for Oct. 19, p. 8355) provides that the duties of the office shall be to determine the amount of existing stocks of chemical and pharmaceutical products, to estimate the present volume of production, and to secure production and distribution for the future. "It is equally its duty," the decree continues, "to develop in France a more intensified production of these same products and to encourage the manufacture of new products." Mr. Behal, professor in the Ecole Supèrieure de Pharmacie and member of the Academy of Medicine, is named director.—Consul General A. M. Thackara, Paris, Oct. 22.

Section on Historical Pharmacy

Papers Presented at the Sixty-Second Annual Convention

ADDRESS OF THE CHAIRMAN OF THE HISTORICAL SECTION.

DR. W. C. ALPERS.

Chairman Alpers prefaced the reading of his address with the following remarks:—

Before reading my address I will state that during the last year a number of letters, papers, clippings, etc., were sent me from various sources, to be incorporated in the archives of the Association, the most important ones being the following:

Correspondence of the Council during the year 1913, sent by the Secretary of the Council, Mr. England, to General Secretary Beal.

From H. M. Whelpley the following Ebert miscellany was received:—

The license of Albert E. Ebert as a physician; the inventory of Mr. Ebert's store at the corner of Polk and State Streets, Chicago, and his appointment as a member of the Board of Pharmacy of Illinois.

From Francis B. Hayes, former editor of the Druggists Circular, was received the following historical miscellany:—

Press clippings relating to the meetings of the Association held at New York in 1907, and at Richmond in 1900 and 1910 and of the meeting of the U. S. Pharmacopœial Convention held at Washington, D. C., in 1910.

Originals of letters from distinguished pharmacists anent the life and death of Professor C. S. N. Hallberg, originally published in the Druggists Circular. Other clippings on the same subject collected from other journals.

Letter from Prof. J. M. Maisch anent the dispensing of poisons.

Formal announcement, in French, with heavy mourning border, of the death of J. L. A. Creuse.

Engraved card of Monsieur Creuse with his Brooklyn and Paris addresses added,—presumably in his own handwriting.

Photograph of Microscope, with original diagram and description, signed by Hans M. Wilder, of his "gauge for the proper polarizing angle of the block glass."

Manuscript of Hans M. Wilder entitled, "Examinations of Colors, Yarns and Fabrics for Arsenic and Tin," translated from the Rundschau.

ADDRESS.

During the last year the remark has been made by some of our members, and also, in the correspondence of the council, that the Historical Section did not arouse any interest, and might just as well be abolished, in order to shorten or facilitate the work of the Association. I consider it proper and timely, to refute these arguments and point out that the Historical Section is not only useful but necessary for the further development and standing of the American Pharmaceutical Association.

There can be no doubt that there are some among our 3000 members—in fact it would be remarkable if there were not—who take no interest in historical matters at all, whether pharmaceutical, industrial or political, and to whom history in general is a useless science; men who only live in the present, who cannot, and will not, learn from the successes and failures of former generations; men who in the dullness of their own intellect or inflated conception of their own importance, know nothing in this world but themselves, and believe that their own narrow views are sufficient and broad enough for everybody else. We need not listen to the views of such men. If we did we would have to abolish, not only the Historical Section, but all sections; for there are others who hold these same narrow views about the Scientific Section, others about the Commercial Section, and so on. The strength of the American Pharmaceutical Association, however, lies in the fact that it has always embraced all branches of pharmacy, and has devoted equal time, labor and energy to each and every one, thus expounding, promoting and encouraging knowledge, instruction and industrial development, and its true members understand and appreciate this broad scope.

Then the claim is made, that the attendance, at the meetings of the Historical Section is generally small, on account of lack of interest. This charge of small attendance has been true, I regret to say, during the last few years; but the reason for it is not lack of interest, but rather errors of arrangement and management. The programs of the meetings of the last few years, show that the sessions of the Historical Section were put at the end of the meetings, mostly on Saturday. This was probably done without any particular intent, but simply because ours was, until recently, the youngest of all the sections. However, this arrangement necessarily curtailed its attendance, as many members leave for home on Saturday. Another cause of absence, has been the unreasonable extension and adjournment of other sections. If the business of other sections, is not finished in their allotted time, they generally adjourn to Saturday, without paying any regard to those that will meet at the same time. At the Nashville meeting three adjourned-sections met, in this way, on Saturday, that had had ample time before, but either through the leniency of their chairman, or the loquacity of some talkative members, who must be heard on every question, at every section and time, for fear the Association might go to pieces without their garrulousness, they did not finish their business and encroached on the prerogatives of the later sections. No wonder that there is a small attendance, if three adjourned-sections meet at the time allotted to this section.

The importance and necessity of a Historical Section, in an association like ours must be apparent to every thinking member. There is no other association of national character, whether scientific, commercial or political, that does not devote a good deal of its time to this work. Indeed, so important are the records of events considered, that we have numerous associations devoted solely to history; nearly every state possesses one, many counties and cities embrace it in their official work, and, besides these, there is the great National Historical Association. The truth of the word of the great historian, Ranke, that, "History is the court of the world that renders only just verdicts," has long been recognized, and neither efforts nor money are spared to read these verdicts to the people, and to let them learn and profit by them. The study of history is a safe and reliable guide in the progress of all human endeavor, no matter on what field it is employed or to what purpose it is directed.

Among the professions, pharmacy needs this guide more than any other. The aims and purposes of most professions are well defined and clearly laid out; their disciples march, like a closed phalanx, on the straight road that their leaders have pointed out. They may differ as to methods, as to time, as to means, in smaller matters. But they are united and unanimous in their fundamental

principles, and wherever obstacles appear or enemies arise, they offer a firm front and always come out victorious. Not so with pharmacy. Pharmacy is not a science by itself, like Medicine, Theology, Jurisprudence, Mathematics, and others. It is composed of parts of many sciences. It takes from botany, chemistry, medicine, microscopy, and others. It borrows from commercial pursuits and demands high skill and handicraft from its disciples. All these parts it joins together and builds a new structure from them. Such a complex organism cannot endure, unless each part is strong in itself and well balanced in its proportions and importance. No wonder that difficulties and dissensions arise, no wonder that many minds will differ as to the importance of some one part. It is thus that pharmacy easily deviates from her straight and safe course and loses herself in a maze of conflicting advice and efforts. Here History will point out the right way. We can learn from her that these controversies, these aberrations from the straight course, are the natural consequence of its complex character, that they have existed from the very beginning and will forever continue to exist. We will learn that, at every emergency, strong and faithful leaders have arisen, undisturbed by the clamor of the mass, with clear views and courage of conviction. We will learn that many times these leaders have been derided and ridiculed, but that their views finally prevailed. We will learn that pharmacy, like every other science that aspires to truth and justice, cannot succumb to outer influences of a base nature, no matter how strong they may appear. And when we turn to the lives and deeds of the noble men in our profession that shaped its course in the past, we will gain strength, to uphold the high aims of our vocation, and confidence in the final outcome.

Let us place the lives of our best men before the young, and teach them that success in life does not mean wealth alone. Let us create in them, by the examples of those whom we honor, a high conception of their duties and strong impulse to do their very best in their positions, however humble they may be. All can learn from these examples, and in the records of pharmaceutical history, that there are lessons for every member of our profession. By simply reading the proceedings of the American Pharmaceutical Association of past years, we find many instances of every type of pharmacist from the highest scientific man to the strictly commercial drug dealer, each worthy to be emulated, each aspiring to and reaching the aim that he put before himself, each accomplishing success as he understood it.

The manufacturer will find hundreds of hints serviceable to his purpose, in the employment of various methods or the use of tools and machinery; he will learn the wishes and needs of his customers, profit by suggestions and benefit by the inventive minds of former generations.

The source of wealth that lies in the study of pharmaceutical history for the scientific man, is really inexhaustible. There is no subject of the wide domain of pharmacy, that has not been approached in former years; no theory that has not been discussed; no problem, the solution of which has not been attempted. It is true, many of these papers appear crude or unfinished in the light of our present understanding, others that were once hailed as pioneers on new fields, may have turned out wrong since then—but in spite of this, there are lessons in them; they may be regarded as warning signals for the searcher of truth and show which roads to avoid, which thicket to circumvent.

The young man with literary ambition, by reading pharmaceutical history, will not precipitately rush into print, whenever a new idea or problem,—new to him and therefore as he argues to every one,—agitates his mind. He will learn that probably nine-tenths of what he supposes to be new, has been treated by others before him; but, by reading and studying these problems as they appeared to others under other conditions, he will improve his knowledge, correct his judgment and clarify his views.

The greatest gain in studying the history of pharmacy will accrue to the men who compose the bulk of our profession, the practical pharmacists. Whether they look at their vocation as a profession or business they will learn that pharmacy is not a science or occupation the conduction of which can be put down in so many rules or laws; that it is rather a continuous development, that its work and purpose are progressive and constantly changing. Rules of business and industry are always based on surrounding conditions, on the quality of customers, on international trade, on new inventions, new methods of manufacture, new uses and applications of apparatus, and many other conditions, over which neither the individual, nor the united craft, nor even a whole nation, have any influence. History shows us that all these conditions undergo a constant change, and that our rules and methods must likewise change. Stubborn adherence to certain methods, that were good and profitable in past years, is a fight against the inevitable, and neither close combination, nor boycott, nor promises, will check the onward march of such commercial evolutions. History will show us that we must pay attention to these evolutions and adapt ourselves to them. We will thus learn that the most successful men are those who with keen eyes foresaw such changes and prepared their methods, their purchases, their whole business for them. Adaptability should be the leading quality of every successful pharmacist, not stubborn conservatism or reactionary revolution. This is true for the large dealer as well as the smallest apothecary, for the strictly commercial man, as well as the professional pharmacist. And more, we learn that these various men of different type, no matter how divergent their views and aims, might have worked harmoniously together and in combination, each one working faithfully in his sphere, to erect the great structure of pharmacy.

The broad and general knowledge, that History, like a good friend and teacher, thus imparts to every disciple is, however, not the only gain that we derive from its study. We also learn that system and order are of immense importance in another direction, and are thus shown the way to new and necessary work in the interest of our profession. Many times in reading the records of past pharmaceutical history, we are disappointed about the lack of information and dearth of dates concerning some great man or important event. In some instances we do not even know the date and place of birth of some of the pharmacists, who shaped the destinies of our profession; sometimes, also, conflicting views are expressed, and it seems impossible to sift truth from supposition and error. To overcome this difficulty a historical record of every member of our profession should be kept, or if this demand is too broad,—of every member of our Association. Cards should be devised and written giving his birth, education and industrial and scientific development. Dates of membership in this Association and others should be provided, offices that he held, committees to which he belonged, reports that he wrote, addresses that he made, papers and books that he compiled, lectures that he delivered, degrees conferred upon him and other honors that he achieved. The Austrian Pharmaceutical Association entertains what they call a *Gremium*, a combination of a scientific school and business office, where they keep a record of every pharmacist in the large domain of the Austrian empire. True, there are not as many members as there are in the United States, as the number of pharmacists of that country is restricted to a fixed percentage of population. But by systematic and persistent work we, too, might have such valuable records, particularly if the state associations would also take up this work, and thereby divide it in many parts. It seems to me that the Historical Section should undertake this work for the members of the Association, and every new candidate should in future be requested to fill out a question sheet devised for this purpose. It would not take long to obtain this information from the living members, and after that the history of those deceased should be treated in the same way. Such a record, if once completed, would

not only furnish dates and names, but also serves to disclose the inner thoughts, the underlying motive power, that actuated leading men in their doings, which to discover and analyze is the highest and most difficult aim of history.

Together with such records, should go a historical museum. The first historian of this section, Dr. E. Kremers, has contributed valuable papers on the usefulness of such an institution which to repeat does not seem necessary. But as but little has been done, so far in this direction, I again urge the Association to provide some means for this most useful and necessary institution, and to create the position of a custodian, whose duty it should be to collect objects of interest, classify and arrange them and enter into correspondence with all who might be able and willing to contribute to such a collection. The importance of such a museum, and the interest evinced in it, is best shown by the zeal with which traveling pharmacists visit the Germanic Museum in Nuremberg where three different pharmacies representing the 13th, the 15th and the 17th centuries, are exhibited. The articles shown there were contributed from all parts of Germany and every German pharmacist is proud of the collection. Other similar collections may be seen in Berlin, Vienna and Berne, each representing the history of pharmacy of its country. Our country should not be backward, and defer the establishment of a pharmaceutical museum until it will be difficult, or even impossible to collect articles of interest of past years. If the proposition to erect a home for the American Pharmaceutical Association ever becomes a reality, such a house would be the proper place for the museum and historical records. But a beginning should be made now, and a custodian should be appointed, who has time, ability and inclination to perform this work and who can give it a temporary abode.

I therefore recommend that such a custodian be appointed by the council or the work of the historian be extended and sufficient funds be appropriated to carry out the work in a dignified and proper way.

Before closing my address I consider it my duty to express my sincere thanks to our Secretary, Mr. F. T. Gordon, who has filled this important office for a number of years with most praiseworthy zeal and remarkable ability. It is owing to his energy that the sessions of the Historical Section have been crowned with success in past years. I also thank our Historian and all members who have contributed in such able manner to the archives of this section and to the members of the Association in general for their faithful attendance and interest.

REPORT OF THE SECRETARY.

The work of the secretary for the past year has chiefly been the soliciting of contributions from members on topics of historical interest to pharmacy and the collection of historical material. The suggestion made at the Nashville Meeting, that the collection of pharmaceutical journals and daily newspapers containing reports of the meetings of this Association, has proven successful, and I have received copies of all the leading pharmaceutical journals of that period, which will be extremely valuable in future years, through the photographs and personal items concerning members and their activities. I wish to express my thanks, and that of the Association, to those editors who have so willingly complied with the request for copies of their journals. We are so accustomed to throw aside newspapers and other printed matter that we often overlook the importance it will have to future students of the history of pharmacy. There is no doubt as to the value of such material, but WHERE ARE WE GOING TO KEEP IT? If we, of the present day, really wish to add material to the building of the temple of pharmacy we must have a place to put it, and not let it be scattered in all parts

of the country. For the preservation of historical material alone, we are absolutely obligated to establish some permanent home or place where the vast collection of personal and scientific data may be available to the student and historian.

This brings me to the greatest difficulty I have met in obtaining material of historical value. Plenty of such material is offered but who will take care of it, who will arrange it so that it will be available? It is not fair and it is, certainly, not creditable to the American Pharmaceutical Association that it should solicit contributions of historical material and then leave their safekeeping to volunteer members in all parts of the country. How does the man who sends us rare photographs, priceless documents and mementos of friends dear to him know what will be done with them? I confess, myself, that I prefer to keep my own collection of historical material where it can be seen and utilized, instead of consigning it to the oblivion of a packing case, located—WHERE? This question of providing a home, headquarters or whatever it may be called, is now the vital one before this Association and the sooner it is attended to the better. We claim to be the guardians of American pharmacy, its past, present and future guides, but, if this claim is to continue, we must assuredly provide a home for the guardian and not let him depend upon the chance hospitality of a stranger. *Ipse facit?* Not if history is true.

The following recommendations as to continuance of the work of this Section are made, based on my experience of the past two years: 1. That state pharmaceutical associations be requested by the secretary of this Section, through their proper officers, to furnish a copy of the printed proceedings of their annual meetings for inclusion in the Historical Collection of this Association. Such material should be obtained by the secretary and transferred to the care of the Historian as convenient. But once again, where will it be kept?

2. That the secretary request copies of the American Pharmaceutical journals containing reports of the annual meetings of the American Pharmaceutical Association, the National Association of Retail Druggists and other national associations connected with pharmacy, in all its branches, and that these shall be sent to the Historian as part of the Historical Collection. Again, where?

3. That such foreign and American publications devoted to pharmacy, as may be received in exchange by the Editor of the Journal of the Association, be ultimately forwarded to the Historian for inclusion in the Historical Collection.

Our chairman has outlined plans for collection and preservation of other historical material in his address, therefore I will close my report by recalling the fact that history is being made now, that will profoundly affect the world, and that our members have an opportunity for laying the foundations of a mighty temple of truth in the history of pharmacy. Until such time as the Association shall provide a suitable place for safe keeping and exhibition of the historical material contributed, I will gladly take care of any sent me and will try to preserve it for future installation in our "Home."

The expenses of this Section have been chiefly for postage and printing, the total amounting to something less than $10.00. All bills have been paid and vouchers are in the files of the General Treasurer.

Respectfully submitted,

F. T. GORDON.

HISTORIAN'S REPORT.

CASWELL A. MAYO.

I beg leave to present the following photographs:

1. House of William Procter, Jr., Mount Holly, N. J.
2. A. Ph. A. members at Mammoth Cave, on the return from Nashville meeting, 1913.
3. E. H. Lowe and Dr. W. C. Anderson.
4. Members of Detroit Executive Committee for the A. Ph. A. meeting, 1914.
5. Members of the N. Y. State Ph. A. at Catskill Mountain House, June, 1913.
6. Thanksgiving Day, 1913. N. W. D. A. Convention at Miami, Fla.
7. Microscopic Laboratory of the New York College of Pharmacy.
8. Members of the Nashville Committee for the A. Ph. A. meeting, 1913.
9. Two Photographs of the College of Pharmacy of the University of Minnesota. (Crude Drug Drying Closet and Section of Pharmacognosy Class Collecting Digitalis Leaves.)
10. At the grave of William Procter, Jr., Mount Holly, N. J., on the 97th anniversary of his birth.
11. Two Presidents at Niagara Falls—John G. Godding, H. B. Guilford.
12. W. S. Richardson, wife and two daughters, both of whom have the title of Doctor of Pharmacy.
12. Members at the Niagara Falls meeting of N. A. R. D., 1911.
13. Officers of the Illinois Ph. Association.
14. Officers of the Chicago Retail Druggists' Association—B. A. C. Hoelzer, Isham M. Light, and James B. Crowley.
15. At Plymouth Rock, American Pharmaceutical Association meeting, Boston, 1911.
16. Mrs. Brunstrom, of Moline, Ill., and other ladies, at N. A. R. D. meeting.
17. John W. Lowe, S. N. Jones, W. C. Anderson—three members who have attended every meeting of the N. A. R. D.
18. The Chicago Delegation, with the Niagara Falls for background.
19. Mr. and Mrs. Matthew White.
20. Mrs. Phil. Forbirsh, of Tampa, Cuba, and her sister.
21. Officers of the Illinois Pharmaceutical Association—Ralph Doehrland, Duncan, Charles Aschelpohl and Jim Wells.
22. Delegates from Illinois?
23. Otto Hottinger and Charles Huhn with little nephews at Detroit depot on way to Niagara Falls.
24. Scene taken from Steamer Island Queen, N. A. R. D. Convention, Cinn., 1913.
25. Joe H. Schmitt, Sol. A. Eckstein, Mil. N. A. R. D. Convention, Cinn, 1913.
26. Tom Golden and wife on board Steamer Island Oueen, N. A. R. D. Convention, Cinn., 1913.
27. Embarking for Coney Island, August 29, N. A. R. D. Convention, Cinn., 1913.
28. Marion B. Craig and Hugh Craig.
29. Ohio Delegates to the Milwaukee meeting of the N. A. R. D., 1912.
30. Snapshots taken at the Denver meeting of the A. Ph. A.
31. Snapshots taken at the Denver meeting of the A. Ph. A.
32. Members of the National Association of Boards of Pharmacy.
33. President's party at the Milwaukee meeting of the N. A. R. D.
34. Photographs and pamphlets of J. D. Riedel's Swiss Pharmacy.
35. Travelers' Auxiliary at Saratoga Springs.
36. Assistant Pharmacist Mayor, of the 2nd class—French Pharmacist—Navy.
37. Robert Burns Bowling League.
38. Chicago Druggists on deck of Theodore Roosevelt.
39. Serving the Barbecue at Coney Island.
40. J. H. Beal.
41. Liebig Monument.
42. Outgoing officers of the Illinois Pharmaceutical Association and of Ill. Travelers' at 1914 meeting.
43. George Reiman and his four sons.
44. Belle Isle, Pleasure Boat, Detroit.
45. Canal at Belle Isle Park, Detroit.
46. Hurlburt Memorial, Water Works Park, Detroit.
47. Wicke's Drug Store, Brooklyn, N. Y. H. Schlesinger in front.
48. Group of Tourists on the "Moffat Road"—Denver, N. W. and Pacific R. R.
49. Phila. delegates to the convention meeting of the N. A. R. D., 1913.

50. Members of the Commercial Travelers Association of the New York State Association at the Rochester meeting.
51. New York State Pharmaceutical Association at Manitou Beach, near Rochester.
52. Members of the New York State Board of Pharmacy, 1914.
53. Group—Dr. and Mrs. H. M. Whelpley and Mr. and Mrs. Wm. Mittelbach.
54. American Association of Pharmaceutical Chemists, at Hotel Somerset, Boston, June 1914.
55. A. Ph. A. at Glacier Lake at Denver meeting.
a55. Snapshots at the Milwaukee meeting of the N. A. R. D.
56. Delegates to the Milwaukee meeting of the N. A. R. D.
57. The Phila. delegates to the N. A. R. D. meeting at Milwaukee.
58. Prof. W. H. Perkin and Dr. Carl Duisberg at the Eighth International Congress of Applied Chemistry.
59. Dr. Reid Hunt and Dr. J. J. Abel, Prof. of Pharmacology, Johns Hopkins University, Baltimore, at the E. I. C. of A. C.
60. Dr. Carl Duisberg, Dr. John H. Findley and Herman A. Metz at the E. I. C. of A. C.
61. Dr. Charles Baskerville, Dr. S. A. Tucker, Dr. A. S. Cushman and Dr. E. Coggeshell at the E. I. C. of A. C.
62. President Nichols and Sir William Ramsay on the Steamer Excursion at the convention of the E. I. C. of A. C.
63. Four U. S. Government chemists—Dr. W. D. Bigelow, A. Seidell, E. W. Boughton and F. C. Cook, at the convention of E. I. C. of A. C.
64. Three American chemists—Prof. J. P. Remington, Dr. S. P. Sadtler and Dr. W. F. Hillebrand at the convention of the E. I. C. of A. C.
65. U. S. Military Academy at West Point as seen from the steamer.
66. Portrait of Sir William Ramsay.
67. Newspaper print of Dr. R. Prescott, first dean of the School of Pharmacy of the University of Michigan, with history of the school.
68. Correspondence of the Council during 1913, contributed by J. H. Beal, Scio, Ohio.

I also beg leave to present the following items of interest:

Labels used by Professor Hallberg.
Circular sent to the pharmacists of Maine in connection with the A. Ph. A. meeting at Montreal.
Annual "Round-Up" issued by students of Baylor University. College of Pharmacy, Dallas, Texas.
Story of Philo Carpenter, Pioneer Druggist of Illinois.
Souvenirs of the Milwaukee meeting of the N. A. R. D.
Views of the University of Minnesota.

ATTAR OF ROSES FROM BULGARIA.

American purchases of attar of roses increased from $580,783 in 1912 to $791,370 in 1913. Much of this comes from Bulgaria. Consul General C. C. Campbell, Jr., of Bucharest, Roumania, sends a list of the principal Bulgarian exporters of attar of roses, which may be had from the Bureau of Foreign and Domestic Commerce, at Washington, or its branches. The list was prepared by A. C. Kermektchieff, American consular agent at Sofia, Bulgaria. In transmitting it he calls attention to the advantage which would accrue to the American importers of this article if an agency were established in Bulgaria to purchase the essence direct from the producers instead of from the exporters.

PHARMACEUTICAL HAPPENINGS A CENTURY AGO.*

OTTO RAUBENHEIMER, PHAR. D.

In accordance with my promise, as former Chairman of the Historical Section, the writer presents the following historical paper on Pharmaceutical History, which he trusts will prove of interest to all pharmacists.

The year 1814 practically ended the career of the Emperor Napoleon I, to whom pharmacy must be always grateful for the establishment of military and hospital pharmacists in his *Grande Armee*. Many, a great many, of the pharmacists, most celebrated in France, began their career as such, in the armies with which Napoleon waged his conflicts.

In this paper the author has divided the subject into three parts:

1. Pharmaceutical Happenings in 1814.
2. Men, especially pharmacists, born in 1814.
3. Those who died in 1814 and whose names should be remembered by pharmacists.

HAPPENINGS IN 1814.

WOLLASTON.

W. H. Wollaston the English physicist and chemist, regarded Dalton's *atoms* as "Equivalents" only.

FRAUNHOFER.

Joseph Fraunhofer, Ph. D., published his memorable work on the solar spectrum, in the Denkschrift of the Muenchener Academie, Band V. 1814-1815. He was the son of a glazier and was born March 6, 1785, at Straubing. He served as apprentice with Weichselburger, the celebrated mirror-maker of Munich. In 1806, he became optician in the mathematical institute of Reichenbach and, in 1809, he became a partner in the establishment. It was here that the work on the solar spectrum was done and that the fixed lines of the spectrum were first determined and were used to measure refraction. Fraunhofer died on June 7, 1826, at Munich.

SATTLER.

In this year the German Chemist, Sattler discovered at Schweinfurt, Bavaria, the celebrated green mineral color named after that place. Chemically, it is a double salt of copper acetate and copper metarsenate, $Cu(C_2H_3O_2)_2 + 3Cu(AsO_2)_2$.

Besides its original name, *Schweinfurt Gruen*, it is also called *Kaiser, Wiener* or *Pariser Gruen*. It was used extensively as a color, but has since gone out of use, being very poisonous due to its arsenic content. The original process of manufacture was kept a factory-secret, until Liebig, and later Braconnot, published the formula and process of manufacture.

In 1814 Louis Nicolas Vauquelin, the celebrated French pharmacist accomplished the separation of the metals of the platinum group.

In the same year Gay-Lussac discovered Chloric Acid, $HClO_3$, that great oxi-

* Read by title before the Historical Section at the Detroit meeting.

dizing agent. It is well to remember that Potassium Chlorate $KClO_3$ was previously discovered by Higgins in 1786.

BORN IN 1814.

FRÉMY.

Edmond Frémy (1814-1894) is a descendant of a family of celebrated French Apothecaries. His grandfather was a pharmacist in Auxerre, who died in 1804 and his father was the celebrated Edmond François Frémy, who together with Courtois, the discoverer of iodine, and Thenard, the discoverer of hydrogen peroxide, worked under the celebrated French pharmacist and chemist Fourcroy.

Edmond Frémy was noted for his investigations on Alpha and Meta Stannous Acid and also the Ferrates. He was the first to prepare Potassium Metantimoniate $KSbO_3$ or Kali Stibicum, also known under the name of Antimonium Diaphoreticum, prepared by fusing together Antimony and Potassium Nitrate. In 1854 he originated the method of Fluorination, and, in 1869, he first prepared pure anhydrous Hydrofluoric Acid.

Like his father he also became Professor of Chemistry in Paris.

MAYER.

Julius Robert Mayer was born November 25, 1814, in Heilbronn, Germany. In his "wanderlust," he made a voyage to Java on a Dutch ship. Later on he became city physician in his native town.

His numerous works on physics were published in Liebig's Annalen from 1842 to 1851, which also printed his celebrated "Dynamic of the Heaven" in 1848. His most important work, however, was on the *"Mechanical Equivalents of Heat,"* published in the same journal in 1851. Julius Robert Mayer's greatest credit however, is in the establishment of the "Law of the Conservation of Energy," and his name will continue to live forever in the science of physics.

Like many other of the illustrious brain workers, Julius Robert Mayer died in an insane asylum in 1858.

SCHACHT.

George Frederick Schacht (1814-1896) was the descendant of a celebrated German family of apothecaries and beeame one of the best known and most intelligent German Apothecaries in England.

About 1840, he became the owner of a pharmacy in Bristol and later a member of the firm of Giles, Schacht & Co. He was elected Vice-President of the Pharmaceutical Society of Great Britain, and during 25 years served as a member of the Pharmaceutical Council. Schacht was very active in professional and scientific pharmacy and also in other literary work.

In 1858 he originated "Plasma," which he brought forth as a substitute for ointments, possessing emollient and demulcent properties without having the disadvantage of being greasy. He published this formula in the Pharmaceutical Journal, 1866, page 210, as follows:

Powdered starch	70 grains.
Glycerin	1 fluid ounce.

Heat to 240 degrees F. with constant stirring until union is affected.

This preparation was adopted into the British Pharmacopœia as *Glycerinum*

Amyli, into the U. S. P. as *Glyceritum Amyli* and into the German and other Pharmacopœias as *Unguentum Glycerini.*

About 1865 he originated Liquor Bismuthi, which was adopted by the British Pharmacopœia in 1867. It has frequently been stated that the official preparation differed from the proprietary article in taste and action, because it was not entirely free from Nitric Acid. In 1885 this solution was then prepared from Bismuth Citrate and Ammonia Water and was made official as *Liquor Bismuthi et Ammonii Citras.*

George Frederick Schacht died in 1896, and with his passing away England, as well as the entire pharmaceutical world, lost one of its most scientific men.

TRAPP.

Julius von Trapp, one of the most, if not the most, celebrated men in Russian pharmacy, was born in 1814 in Mariampol, Poland, as the son of an apothecary who immigrated from Prussia. He was educated at the German gymnasium in Tilsit, Prussia, where he entered Maurach's Apotheke and passed his examination as apprentice in 1836. He studied in St. Petersburg and passed his examination as "Provisor," in 1842. In the following year, he became assistant to the Professor of Pharmacy and Chemistry at the Imperial Academy. In 1848 he obtained the degree of *Magister Pharmaciæ* and passed his State Board Examination. He remained in the service of the government all his life, and was very highly honored, obtaining the following titles: *Hofrat,* in 1852, *Staatsrat and Excellence,* in 1863, and *Geheimrat,* in 1870.

It is said that the starting point of Trapp's political-pharmaceutical career, was the serving of a glass of water to a lady of nobility, on a railroad train, who through this incident became his patroness.

Between the years of 1858 and 1877, he was Professor of Pharmacy, Pharmaceutical Chemistry, Pharmacognosy and Toxicology at the Medical-Chirurgical Academy of St. Petersburg. He became President of the Pharmaceutical Association of St. Petersburg and was a State Board Examiner for a great many years. It was said that Dr. Trapp in the latter capacity was very fond of "trapping" the candidates.

The University of Kœnigsberg bestowed upon him the Honorary Degree of Doctor, and about 30 scientific societies made him an honorary member.

February 12, 1893, marked the fiftieth anniversary of Trapp's career as an educator. This fiftieth jubilee was celebrated in a very elaborate manner and numerous presents were received from all parts of Russia as well as foreign countries . At the same time, Trapp received a beautiful diploma making him an honorary member of the Russian Academy.

Julius von Trapp was very active in a literary way. He wrote numerous papers and books which are standard works to-day, especially in Russian pharmacy. A great many of his works have also been translated into German. The following is a list of the most important: Hospital Pharmacopœia, 1860; Pharmacopœia Militaris, 1866; Pharmacognosy, 1858 and 1868; Flotten-Pharmacopœia, 1869; Pharmacopœia of the Imperial Court Apotheke, 1871; Toxicology, 1876; Prescription Dispensing, 1877 and 1880.

Besides this, he has been an active member on the Revision Committee of the Pharmacopœia Rossica of 1867, 1870, 1880 and 1891.

The name of Trapp will live forever in pharmacy of Russia, as well as throughout the entire world.

ANKUM.

Christian Hendrik van AnKum (1814-1888) was one of the most celebrated pharmacists in Holland. He was born October 16, 1814, in Dalfsen. In 1828, at the early age of 14 years, he entered the apotheke of Van Giffen in Steenwyk. Here he began his pharmaceutical career and learned the fundamental principles of applied chemistry, in which he later became a true master.

He studied at the University of Groningen, under the celebrated Professors Hall and Stratingh. In 1835, he passed the State Board Examination and became assistant in the laboratory of the University. It was here he accomplished his work on the Iodine content of Cod Liver Oil. He married in 1842 and became the owner of a pharmacy.

He was active in scientific pharmacy and was an honorary member of different pharmaceutical and scientific societies. He was also a member of the Revision Committee of the Pharmacopœia Nederlandica II and III. From 1865 until 1884, he was a member of the Board of Pharmacy in Groningen. AnKum was very modest and even went so far as to decline the chair as Professor of Chemistry at the University. In 1878 he celebrated his golden jubilee or his semi-centennial as pharmacist. On this occasion the King of Netherlands made him "Ritter of the Loewenorden." At the same time the pharmacists throughout Netherlands sent him a substantial silver present, which was delivered by a special delegation.

The name of AnKum together with Haaxman and Opwijrda will forever designate the *coryphees* of pharmacy in the Netherlands.

DIED IN 1814.

THOMPSON.

Sir Benjamin Thompson, Count Rumford, was born on March 26, 1753, at Rumford, N. H., which place has been re-named Concord. In 1772, he became a school teacher at Bradford, Mass., and then at Rumford, N. H. It is not to the credit of this American that he enlisted in the British army and fought against the Patriots. In 1783 he went to England and there was made a "Sir." In 1785, he went into the service of Karl Theodor, by whom he was made a Count. In 1798 he began his memorable work on "Heat by Mechanical Means," and in 1799 he returned to England. Rumford certainly had the "wanderlust" as in 1802 he went to Paris and, in 1805, married the widow of Lavoisier, that great chemist and founder of the new chemistry. In 1809, he became separated from Madame Lavoisier and then continued again his scientific work.

Count Rumford should also be known to pharmacists, because as early as 1813 he used a method resembling our present percolation for preparing coffee. This is fully described in his Eighteenth Essay in the Repertory of Arts for April and May, 1813.

Count Rumford deserves special credit for being the first to ascertain that liquids

can be boiled by means of steam. He was a very prolific writer and his works are published as "Essays, Political, Economical and Philosophical," in three volumes, London, 1796-1803. His works are also published in French and in German.

In 1796 he endowed the Royal Society of London and the American Academy of Arts and Sciences with a considerable sum for a prize medal for practical and utile inventions.

In 1810 he founded the London Royal Institution.

Sir Benjamin Thompson died August 21, 1814, at Auteuil near Paris. Rumford Hall, the lecture room in the Chemists' Club in New York City, is named after this scientist and is adorned with his bust.

A BRIEF HISTORY OF THE HOMŒOPATHIC PHARMACOPŒIA AND SOME COMMENTS THEREON.

FREDERICK T. GORDON, B. SC.

It will doubtless surprise many of our members to be told that the homœopathic school of medicine has a pharmacopœia which is just as carefully revised and edited, as is the United States Pharmacopœia under the direction of a permanent body, the American Institute of Homœopathy, an association corresponding to the American Medical Association, in its relation to physicians and surgeons of the homœopathic school.

I have had the opportunity lately of observing the homœopathic practice of pharmacy and its study has been so interesting and full of valuable information, that I am sure it will interest others and that a brief history of its origin and development will be appropriate for inclusion in the contributions to Historical Pharmacy from this Section. We know very little of homœopathic pharmacy, as practitioners of allopathic pharmacy, but such knowledge should be a part of our equipment: *"Pharmacistus sum et nil pharmacopœiae mihi alienum est"* should be our motto. I hope that some member will contribute a history of Eclectic Pharmacy at our next meeting, to round out our archives.

Most of us trained in the allopathic school look somewhat derisively upon the homœopathic materia medica, as nothing but little sugar pellets, or infinitely diluted tinctures or triturations of drugs, but this is a very mistaken idea; the homœopathic pharmacist must be acquainted with many drugs, their constitution and methods of preparing them for medicinal use and the proper form in which they should be prepared. The essence of homœopathic medication being simplicity, the administration of a single drug at one time, the homœopathic pharmacopœia does not contain mixtures such as are given in our pharmacopœia.

All preparations are made from a single drug as tinctures or triturations and then diluted or exhibited as powders, globules, etc., etc. In fact, the homœopathic pharmacopœia is more the materia medica of homœopathic practice than a pharmacopœia such as the U. S. P.; the drugs are described singly, directions are given as to the quantities to be used for making the mother tincture or first trituration

and the dilutions or attenuations to be made from these. General methods are described and directions are given for preparing each class, which apply to all the drugs included in the official list, so that the pharmacist is never in doubt as to the proper method of preparing remedies from crude drugs. This simplicity and the rigid rules laid down as to methods of preparing tinctures, triturations, etc., makes uniformity in strength and appearance possible, much more easily than does the manufacture of compound preparations containing several drugs. The only drawback to absolute uniformity is the lack of assay methods in the homœopathic pharmacopœia. Tests for many chemicals are given, but no assay methods for vegetable drugs, which constitute the larger part of homœopathic materia medica nor for inorganic salts. Serums are not mentioned, although used freely by homœopathic practitioners. Many animal products are official, also preparations derived from insects (apis mell), and snakes (lachesis).

If the digression will be pardoned, I would like to say that I am beginning to believe that Hahnemann was a prophet in his theories as to the principles of drug action, his theories, considered in the light of latter day scientific discoveries, are startlingly near to what modern science has partially proven. For instance the famous text, *"Simila similibus curantur,"* (like cures like), is the basis of modern serum therapy. We give antitoxins prepared from the very germ that causes the disease. Is not that like curing like? Hahnemann's theory was that a drug that would cause certain effects in the healthy body, would counteract the same conditions if caused by disease. Where is the difference? Again, his theory of attenuation, is but the ionic theory of dissociation applied to drugs. Homœopathy does not teach that the more diluted a drug is, the stronger it is, as is believed by many, but it does claim that a drug is rendered more potent by minute sub-division than if administered in masses. This is the ionic theory, that the activity of a salt is proportionate to the dissociation of its molecules or atoms into electrons or ions, the homœopathic theory is, that the more minutely the particles of a drug are divided the more points of active contact, or absorption, it will have. This theory is the basis of homœopathic pharmacy,—division of the drug into the most effective number of minute particles, each of which is free to exert its action without being hampered by inclusion in a comparatively large mass with few free particles. Contrary to another erroneous belief, homœopathic pharmacists do not claim infinite divisibility of a drug, they recognize that it is impossible to subdivide a drug into particles of infinitesimal or molecular size and that each drug has a limit as to sub-division and size of particles in tincture or in trituration. It is not for me to express an opinion as to the truth or error of the two schools of medicine, these comments are made in hope of correcting misapprehension as to the practice of homœopathic pharmacy.

History.—The first publication that may be called a homœopathic pharmacopœia was Hahnemann's *"Fragmenta de viribis medicamentorum positivis sive in sano corpore humane observatis,"* published in 1805. This was followed by his "Materia Medica" and "Chronic Diseases," published in parts, between the years 1811 and 1832. In 1832, was published his *"Archiv"* which contained much material from the preceding works. In all of these, directions were given for the preparation of remedies. The first homœopathic dispensatory was written by Caspari and published at Leipsic in 1825, German being the language used. A

revision of this work was published in 1828. The year 1829 was a period of great activity among homœopathic writers, the first distinctive homœopathic pharmacopœia being compiled and published by Hartmann, at Leipzig, in German, a revision of the Homœopathic Dispensatory by Caspari, (German) and homœopathic pharmacopœias prepared by Belluomini and La Raja, the two latter being printed in Italian. The first Latin pharmacopœia was published in 1834, being a translation of Caspari's revised dispensatory. The first pharmacopœia written in French was compiled by L. Noirot and Ph. Mouzin and was published in Paris and Dijon in 1835. The first homœopathic pharmacopœia written in English, was a translation by Dr. James Kitchen, of Philadelphia, from the Nouvelle Pharmacopee et Posologie Homœopathique (French) of Jahr, Paris, 1841, published in Philadelphia in 1842, pp. 306. Numerous revisions of older works and several new works were published in various languages between 1833 and 1842, German, French, Italian and English being the languages employed. Jahr's pharmacopœia was published as a Spanish translation, edited to date, in 1847 (Madrid) and as a French edition in 1853. In 1845, Gruner issued a very complete work on homœopathic pharmacy and materia medica (German) which served as a standard with the works of Jahr for several years. Later, 1850, Jahr and Gruner collaborated in the compilation of a new homœopathic pharmacopœia which was the most complete work of its kind at that date and which, translated into many languages, served as a text book for many years. The first American edition was a translation by Dr. Charles J. Hempel, published in New York in 1850, under the title, "New Homœopathic Pharmacopœia and Posology." This gave detailed instructions as to the preparation of homœopathic remedies and their dosage. From 1850 to 1865, numerous works on pharmacy were written and published and many revisions of the works of Caspari, Gruner and Jahr were issued by various collaborators. Most of these were written in French and German, Spanish being second, Latin third, Italian fourth, English fifth, as to languages employed. A complete bibliography of the works on homœopathic pharmacy and materia medica published between 1805 and 1865 may be found, by those wishing to go into further details, in the third edition of the Homœopathic Pharmacopœia of the United States, revised edition, 1914, and the mere recital of titles would be of little interest here.

Previous to 1870, all the various pharmacopœias and dispensatories were unofficial, that is they were the work of one or more men of high standing in homœopathic medicine, and they were accepted as text books and standards, because of the eminence of the authors and their collaborators, and of the editors of revisions of the original work. They might be compared, in a way, to our Dispensatories. The first homœopathic pharmacy to be issued officially, under the auspices and sanction of a recognized homœopathic association, was the British Homœopathic Pharmacopœia, published by the British Homœopathic Society, London in 1870, pages 336. This was revised and a second edition issued in 1876, many new drugs being added to its materia medica. The first American Pharmacopœia was published in the same year, 1876, by Duncan Brothers, Chicago, under the title, "The United States Homœopathic Pharmacopœia." This was an adaptation of the British Pharmacopœia and contained a section devoted

to pharmaceutical processes, and methods and directions as to the nature and strength of its preparations. The next important date is 1880, when a *"Pharmacopœia Homœopathica Polyglotta"* was compiled and published by Schwabe. This work was written in German in the original, and this text was translated into English, French, Italian, Spanish and Dutch, the entire work being issued in several volumes. This was a very ambitious work and chapters were added by each collaborator covering materia medica and pharmaceutical practice in the various countries in whose languages the volume was written.

Homœopathy, at first bitterly opposed in this country and in England, was confined chiefly up to 1860, to continental Europe but after that year it steadily increased in popularity in both countries and hence we find greater activity in the publication of works on homœopathic medicine and pharmacy. The third edition of the British Homœopathic Pharmacopœia was issued in 1882 and a "Companion" or dispensatory in the same year. The first edition of the American Homœopathic Pharmacopœia was published, also in 1882, by Boericke and Tafel, New York and Philadelphia, compiled and edited by Dr. Joseph T. O'Connor. Subsequent revisions were made and published in 1883, 1885 and 1890 and succeeding years. The last revision, the ninth, having been issued recently. The publication of this work caused some confusion and much controversy, in early years, as there were now two homœopathic pharmacopœias for the United States, differing to some extent in the materia medica included, and as to systems of dosage, dilutions, etc. As the pharmacopœia issued by the American Institute of Homœopathy had not been revised since its first appearance, 1876, naturally the later work was given preference by the majority of physicians and pharmacists of this school, and it continued to be the practical pharmacopœial authority until 1897, when the Homœopathic Institute issued a second revised edition of its original pharmacopœia. A dispensatory was published in 1884 by Dr. Theodore Williams, Chicago, under the title the "American Homœopathic Dispensatory," which was similar to our dispensatories in that it gave much medical information as to the materia medica as well as to its pharmacy. In 1897 the efforts of the American Institute of Homœopathy to compile and publish a pharmacopœia that would be the official standard for homœopathic practice and a text book in such schools was crowned with success and the "Pharmacopœia of the American Institute of Homœopathy" was completed and published. This book represented the work of years by a special committee appointed by the Institute, and was most complete both as to its chapters on pharmacy, pharmaceutical practice and materia medica. This was accepted as the official homœopathic pharmacopœia by most practitioners and colleges. France and Germany followed the example of the United States in issuing an official pharmacopœia sanctioned by the national association of homœopathic physicians and surgeons, the French Pharmacopœia being published in 1898 and the German in 1901. Both works represent the most advanced pharmaceutical practice of the two countries and were prepared much as our own pharmacopœia is, by committees of revision appointed by the associations representing homœopathic practice. The British Pharmacopœia has also been revised several times and has a similar official status.

This brings us up to the date of the last revision of the pharmacopœia in this country, the "Homœopathic Pharmacopœia of the United States," published as

the third revision of this work, in 1914, under the sanction of the American Institute of Homœopathy. Previous editions were published in 1897 and 1901 under the same title. The present work is divided into three sections: Part I—General Pharmacy; Part II—Materia Medica; Part III—Tables of Reference, Index, etc. It is a most comprehensive work on homœopathic pharmacy and compares very favorably with the United States Pharmacopœia in its particular field, its section on materia medica being especially well written and complete as to description, history and other data. This pharmacopœia is now recognized as occupying the same official standard for homœopathic practice as is the U. S. P. in its sphere, and is the official text book of homœopathic colleges where pharmacy is taught as part of the curriculum. Every homœopathic physician is supposed to know how to prepare his own remedies if necessary, hence a thorough course in its special pharmacy is a necessary part of his education. It is desired by many homœopathic physicians that this pharmacopœia be given the same legal standing as an official standard for drugs used in their practice as is given the U. S. P. and doubtless this will be done in the near future as at present there is no legal recognition of this work as presenting the standard requirements of drugs used by homœopathists.

The greatest obstacle to sanctioning the homœopathic pharmacopœia as a legal standard for homœopathic drugs is its lack of definite standards and assay methods. As the greater part of its materia medica is composed of vegetable drugs, for which no method of analysis or standardization has yet been worked out, the only test possible for these would be botanical identification, but definite assay methods for many potent drugs, such as aconite, belladonna, hyoscyamus, etc., are available and doubtless will be adopted in future revisions. There are no assay methods or rubrics of purity and strength for mineral or vegetable drugs, the tests given being chiefly identity-tests and for the detection of the usual impurities. The strength of liquid and solid preparations is, however, rigidly stated and each drug is treated separately in prescribing the menstruum for extraction, the quantity of fresh or dried drug to be used for tinctures or triturations and the dilutions or attenuations given. One feature is worthy of inclusion in allopathic practice, that of basing the quantity of menstruum used, for the extraction of plant principles, upon the amount of water contained in the green or dried drug. When the plant is used in the fresh state, a portion is taken, carefully weighed, dried and the amount of plant moisture estimated by the loss in weight. This plant moisture, is considered as part of the menstruum and allowances are made accordingly. For example, the mother tincture of aconite is made by the following formula: Aconitum, moist magma containing solids 100 gm., plant moisture 350 cc.; strong alcohol (95%) 683 cc.: to make 1000 cc. of mother tincture. Dilutions: 2 X to contain 1 part of tincture, 2 parts distilled water and 7 parts alcohol; 3 X to be made with one part of 2 X dilution and nine parts of dispensing alcohol (88% alcohol by volume). Triturations are made with milk sugar solely, although cane sugar globules are used for making dry pellets from liquid preparations. These are prepared by adding the required quantity of tincture to a given number of globules to saturation, then evaporating the excess of menstruum by drying.

Homœopathic pharmacy recognizes but four menstrua for use in preparing

crude drugs for administration, these are alcohol, glycerin and water for fluid preparations and sugar of milk for triturations. The fluid menstrua differ in the proportions of alcohol, water and glycerin used, combinations best adapted to exhaust the plant-drugs being carefully worked out and specified for each drug. Milk sugar is used for making triturations and attenuations from both solids and tinctures because of its hardness and inertness, the gritty crystals of milk sugar aiding materially in breaking up the drug into minute particles. It is surprising to what minuteness such refractory substances as silica and the metals, can be subdivided by repeated dilutions and trituration with milk sugar; the particles are almost microscopic. A good magnifying glass is part of the equipment of the homœopathic pharmacist, for he must subject his triturations to scrutiny with a magnifying lens to determine if he has reduced the drug to the requisite fineness.

While not mentioned in the homœopathic pharmacopœia, except as addenda, homœopathic pharmacy also includes the preparation of ointments, cerates and plasters, tablet triturates, globules and pellets of medicated cane sugar, antiseptic solutions, etc. The cerate is the most popular form of external medication; these are made by adding 1 part of the mother tincture of the drug to 9 parts of cerate and heating at a low temperature until the menstruum has been evaporated, then final thorough incorporation of the drug extract. Plasters are similar to those used by allopathic physicians, except that they are made in definite strength according to the usual decimal system. Lead plaster and rubber plaster are chiefly used as bases. Nowadays the homœopathic physician makes use of many drugs not mentioned in the homœopathic pharmacopœia, such as ether and chloroform for surgical anesthesia, ethyl chloride for local anesthesia, etc., etc. Indeed it seems that the two schools are coming into closer agreement every year as to the materia medica used to combat disease, the chief difference being their preparation and methods of administration.

Nomenclature—Weights and Measures.—The nomenclature of the homœopathic pharmacopœia, is different from that of the U. S. Pharmacopœia in many respects. Plant drugs are given the botanical title in Latin, with sub-headings giving the natural order, part used, common name and usually the name in French, German and Italian or Spanish. The plant is fully described, its habitat given, its history and the date and author of its "proving" as suitable for use as a homœopathic remedy. Mineral drugs are described, tests are given as to identity and purity and their physical properties are briefly noted. No directions are given as to the manufacture of any chemical salt or for preparation of the elements employed in a pure form. It is in the nomenclature of metallic salts that the greatest difference between the H. P. and the U. S. P. is noted, the H. P. following closely the old German nomenclature in Latin terms. For example, copper sulphate is *Cuprum Sulphuricum,* copper carbonate is *Cuprum Carbonicum,* calcium chloride is *Calcarea Muriatica,* calcium oxalate is *Calcarea Oxalica,* ferric chloride is *Ferrum Muriaticum,* mercury nitrate is *Mercurius Nitricus* and calomel is *Mercurius Dulcis.* This system of nomenclature seems unsystematic to us, as there are several different terminations used for metals, as shown above, there is no use of the genitive in the Latin titles, all being in the nominative. The nomenclature does not distinguish by termination or formation between alkaloids, glucosides or

other organic salts. Morphine is *Morphinum*, santonin is *Santoninum*, naphthalin is *Naphthalinum*, etc. Acids all have the same termination, as *Acidum Aceticum, Acidum Muriaticum, Acid Phosphoricum*, etc. Most of the metals and metallic salts are given the usual chemical names but the old Germanicized titles as *Kalium, Natrum, Calcarea*, etc., are used for potassium, sodium and calcium, *Plumbum* for lead, etc. The definitive has always the same declension terminative as the subject, as *Calcarea Bromata, Ferrum Iodidum, Mercurius Nitricus*, etc. Few alkaloidal salts are mentioned, preference being given to the plant itself.

As the homœopathic system of dilutions is based on the decimal system, naturally the metric system of weights and measures was adopted in the later revisions of its pharmacopœias and text books. Formerly the old style apothecary's system of weights and measures was used, most of Hahnemann's original works and those immediately following, using it in connection with the centesimal system of dilution. For instance it was directed that a 1 C. dilution of a mother tincture be made by adding 1 drop of tincture to 99 drops of menstruum, triturations were to be made similarly with milk sugar. The adoption of decimal dilutions as the standard, makes it easy in fact to use any system of weights and measures. Numerous tables are given in the Homœopathic Pharmacopœia for converting weights and measures from one system to another, also tables of alcoholic strength, specific gravities, etc., etc.

There is still some confusion as to dilutions and attenuations, because of the two systems of dilution used, the old style, that of Hahnemann, being centesimal dilution and the modern style introduced by Dr. Constantine Hering, of Philadelphia, being decimal dilution. In the centesimal system one part of the mother tincture or first trituration is diluted with ninety-nine parts of alcohol or sugar of milk, to form the first dilution (1 C.), the second dilution (2 C.) is made by adding 1 part of the first dilution to 99 parts of the menstruum, and so on. The highest dilution commonly used under this system is 3 C., which represents 1 part of drug in 1,000,000. It was early seen that the jump from one to a hundred was too great, both as lacking a dilution of intermediate potency and because of inaccuracy due to manipulation. The decimal system of dilution was therefore generally adopted and is now the one official in the homœopathic pharmacopœia and in prescription writing. This system is distinguished by the letter x prefixed by a number denoting the dilution, thus 1 X means a tincture or trituration containing 1 part of drug in 10 parts of menstruum called the mother tincture or first trituration, 2 X, 1 part in 100, 3 X, 1 part in 1000 and so on. These preparations are made by taking 1 part of the higher dilution, as 2 X, and attenuating it by addition of 9 parts of menstruum, so that each succeeding dilution is one tenth the strength of the preceding one in the scale. Dilutions and attenuations are invariably progressive, that is each succeeding dilution must be made from the next preceding dilution. For example a 3 X dilution must not be made by mixing 1 part of drug with 999 parts of menstruum, it must be made progressively, first the 1 X, or mother tincure, is taken and diluted to 2 X, 1 part in 100, and then 1 part of the 2 X is taken and diluted to 3 X, 1 part in 1000. The object of this successive dilution is to insure the greatest possible sub-division of

the drug, triturations made by this method, especially, showing very minute division. 6 X, 1 part of drug in 1,000,000 parts, is the highest in the decimal scale; it corresponds with the 3 C dilution of the Hahnemann scale. Hahnemann at first used even higher dilutions but such dilutions are seldom used and only for very potent drugs, 2 X and 3 X being the dilutions usually prescribed. The medicated sugar globules of the homœopathic physicians are made of the desired dilution by saturating them with a tincture of the desired strength and carefully drying them. These globules are made of standard weights so that a definite amount of tincture or dilution will be absorbed. Tablet triturates are made directly from the attenuated triturations. Of late years certain combinations of drugs in tablet or triturate form have become popular with physicians and patients of the homœopathic school, although not in strict accord with its teachings. Most of these are simple cathartics, laxatives and tonics and are made from homœopathic tinctures or triturations. (Hypodermic tablets are also used.) The use of the Eclectic concentrated plant principles, such as hydrastin, irisin, podophyllin, etc., is also becoming popular with many physicians as they are highly concentrated plant extracts and well adapted to dilution by trituration. Pills, such as we are accustomed to, are seldom or never employed by the strict homœopathist, although some of the younger men occasionally use them.

In concluding this very incomplete reference to homœopathic pharmacy, there is one of its cardinal doctrines that I would like to emphasize as an admirable one for every pharmacist to adopt, that is the doctrine of absolute cleanliness. The basis of homœopathy being the administration of a single drug in as pure a state as possible, great emphasis is given to the importance of cleanliness of utensils, apparatus and materials. Hahnemann, indeed, laid down the rule, that a separate mortar and pestle be provided for each drug and used for that drug only, the same as to percolators, dilution flasks, etc. As it is practically impossible to provide separate apparatus for all the drugs now official, because of expense and inconvenience, it is customary to have a set of apparatus for a group of drugs that resemble each other in general therapeutic properties, even this, requiring an equipment that would daze the average druggist. Great stress is laid on the cleaning of mortars and pestles and general directions are given for their care, use and cleaning. It is easily seen that the slightest adherence of one drug to the sides of a mortar, would affect the properties of a very dilute attenuation of another drug. The mortars and pestles are further directed to be made of the hardest and most impervious ware, glass apparatus and containers to be made of hard glass containing the minimum of water-soluble constituents. All drugs, fresh or dried, are ordered to be kept in air-tight, dust-proof containers, separated by a small space to prevent accidental contamination, and stored in a cool, dark place. Vegetable drugs must be frequently renewed. Macerating-jars, much used for making mother tinctures, are ordered to be made of hard glass or glazed porcelain. Tincture-presses, etc., must be lined with pure block-tin, if of metal, glazed earthenware is recommended for many drugs. Special attention is given to corks, it being recognized that their porosity is a serious disadvantage, so new corks, thoroughly cleansed by boiling in distilled water, are directed to be used for every container or in preparing dilutions.

If simplicity in medication is the gospel of homœopathy, cleanliness in all things

may be called its commandments. It is indeed a pleasing sight that greets one when visiting the laboratory of the homœopathic pharmacist, it is so clean and orderly. Comparisons are odious, so I will not compare it with the average drug store apology, for laboratory and apparatus, either as to completeness of outfit or general order and cleanliness. There are very few homœopathic pharmacists, however, outside the large cities and hospitals, the bulk of the medicines used, either being prepared by the physician himself, or are manufactured on a large scale by firms making a specialty of homœopathic materia medica. As with us the large manufacturer has come to stay and the majority of physicians purchase their supplies from one firm or another. Probably this is for the best as it makes possible the manufacture and standardization of drugs of high quality, at less cost and labor, than could be done by the individual pharmacist himself. There are many more interesting topics that I might add to this paper, but I have tried to include those of general interest, and hope that I have succeeded in giving a fair idea of homœopathic pharmacy to my associates of the other school. I might add that I hope some member will contribute a historical paper of similar nature to this on eclectic pharmacy at our next annual meeting.

CAMPHOR PRODUCTION IN INDIA.

The Indian Trade Journal states that the camphor tree (*Cinnamomum camphora*), so well known in Japan, Formosa, and China, has been successfully planted in Burma, Ceylon, and the Federated Malay States.

In Burma there are plantations in the upper Chindwin, Myitkyina, Bhamo, and southern Shan States. In the Peninsula of India there are experimental plantations in the Nilgiri Hills and in certain isolated patches of Bombay and Madras. In Ceylon, which lies south of the latitude of its habitat, the tree grows only in the more elevated parts; there is a plantation at Hakgala. Great difficulty has always been experienced in getting good seed imported direct from Japan, and there is often wholesale failure to germinate. Seeds can be obtained from the Yokohama Nursery Co., but the seeds sown for the Burma plantations were obtained from Hongkong. In Ceylon it has been found economical to grow the trees in hedges about 6 to 9 feet high, running in the direction of the prevailing winds. As soon as the plants have reached a fair size and formed woody stems they can be clipped —in three years' time in suitable situations. The simplest method is to use hedge shears. Only the leaves and twigs are required, as the use of the wood and roots only leads to wanton destruction of the plants.—Consul Henry D. Baker, Bombay.

Contributed and Selected

DREAMING AND DOING.

JOSEPH W. ENGLAND, PH. G.

Professor Charles H. Rogers, Dean of the Department of Pharmacy of the West Virginia University, of Morgantown, W. Va., has very kindly asked me to send you a word of greeting to be read at the organization-meeting of your branch on November 19th inst., and I do so with pleasure.

I have no special message "to send to Garcia"—only a few cursory thoughts—but I do want to congratulate you upon the splendid forward step you are taking in forming your branch, and I do want to wish you God-speed in your future work. You are building wiser than you know!

The older I grow the prouder I become of my membership in the American Pharmaceutical Association, because this organization stands for the highest ideals of American Pharmacy, and because membership in it is a privilege and an inspiration.

Its objects are to advance the science and art of pharmacy and to improve the conditions of pharmaceutical practice—by stimulating original research work, by diffusing scientific knowledge, by fostering sound education, by promoting rational and well-balanced legislation—and we badly need it, both national and state—by teaching the history of Pharmacy and tilling the soil for the making of future history, and in a hundred different ways striving to better American Pharmacy and help American pharmacists.

The American Pharmaceutical Association represents, in its membership, not only the rank and file of pharmacists, but also, the captains of industry, the teachers of pharmacy, chemistry, botany, materia medica and related subjects, the editors, publishers and writers of pharmaceutical literature, the food and drug officials, the chemists, biologists and bacteriologists. The comprehensive character of the American Pharmaceutical Association is shown by the fact that, at the recent annual meeting, one hundred different organizations in pharmacy and related interests were represented by delegates to the House of Delegates of the Association.

The American Pharmaceutical Association was born in 1852 of a dream or ideal, but a dream backed by action. Sixty-two years ago, there were no legal standards for the identity, purity and strength of drugs, adulteration, substitution and misbranding were exceedingly common, the examinations of imported drugs at ports of entry were most superficial—in fact the first Federal Drug and Medicines Act to control the quality of imported drugs had been enacted but

Address to the members of the West Virginia Branch of the Amerian Pharmaceutical Association, November 19, 1914.

four years before—and such a thing as the regulation of the use of habit-forming drugs was not thought of.

But a few far-sighted men in American Pharmacy dreamed dreams—had visions of what American Pharmacy should be and should stand for, and they founded the American Pharmaceutical Association, decided on the principles of action that should govern their professional and business conduct, and then they toiled and toiled and toiled in the upbuilding of the structure of their organization, and their *work*, and that of their successors, led by those master-minds of American Pharmacy—Procter, Parrish, Maisch, Squibb, Prescott, Curtman, Ebert, Hallberg, Oldberg, Searby, and many others—some of the old "war horses" are still with us, and long may they live—made for the wonderful progress in the science and art of pharmacy that has taken place during the past sixty-two years. The history of the work of the American Pharmaceutical Association, as exemplified by its publications, is the history of American Pharmacy! These fathers of our calling have left us a priceless heritage of deeds well done, which we will do well to emulate. They dreamed dreams, but they actualized their dreams into deeds; and it is up to us to carry on the work of dreaming and doing so well begun.

In an address at Freemason's Hall, London, over half a century ago, Charles Dickens said:—

"The most delightful paper, the most charming essay, which the tender imagination of Charles Lamb conceived, represents him as sitting by his fireside on a winter night telling stories to his own dear children, and delighting in their society, until he suddenly comes to his old, solitary bachelor self, and finds that they were but *dream-children*, who might have been, but never were. 'We are nothing,' they say to him, 'less than nothing, and dreams. We are only what might have been, and we must wait on the tedious shore of Lethe, millions of years, before we have existence and a name.' And immediately awakening, he says, 'I found myself in my armchair.' The dream-children whom I would not raise, if I could, before every one of you, according to your various circumstance, should be the dear child you love, the dearer child you have lost, the child you might have had, the child you certainly have been."

And so it is with the dream-children of our brains in our work for Pharmacy. We dream, we idealize, perchance we act, and the act brings forth fruit, but how often, oh! how often, we lack decision, we fail to act when dream-opportunity knocks at our door—and our dream children die. For to dream only is to die, so far as results are concerned, but to dream and to do, is to live and grow and develop all the latent possibilities within us.

We love Pharmacy and our daily work. We see every now and then something that could be improved, changes that would be helpful and make for genuine progress. We know that if the children of *our* brains were developed, they would grow into lusty fledglings and then into sturdy manhood and would do a whole world of good. But we falter. We hesitate. We demur about training our dream-children. It means work. It means new duties and responsibilities. We don't want to wear the yoke of service. We know it means self-sacrifice. And so we remain mute, inglorious and lazy. We "job along" in

the same old way, in the direction of least resistance or rather in the direction of least endeavor, and we let "George do it." And George does it and he don't do it right. We *know* he don't. His work is all full of flaws. We see a dozen different places where we could have done it—oh! so much better and more effectively. But we didn't and we don't. We fear to plunge into the seething maelstrom of work and self-sacrifice. We are afraid that we may be criticized. We are afraid that we may not be appreciated. *We are afraid to do a man's work for the sake of men and not for the sake of self!* And so we drift, and drift, and drift, just like Charles Lamb did in his dreams, until we awaken from our dreams to find that the shadows of life are deepening and the evening of eternity is drawing near, and then we realize how little we have done despite the insistent calls of our dream-children, during the years that have passed and gone; how little we are doing for ourselves and our fellowmen!

Just a word more and my preachment will be done. Be strong and loyal members of the grand old American Pharmaceutical Association. Do all in your power to advance the objects it stands for. Develop yourself and your latent possibilities. There is more in you than you give yourselves credit for. Don't be afraid of work for the benefit of the other fellow. It will benefit you in the end, as much so or more, than it will him. Dream, dream, dream all you can of what you can do to help yourself and your fellow pharmacists, but be sure—very sure—that your dreams are not idle figments of the imagination, but real pictures, beautiful pictures, *and* that they are backed by action! action! action!

Paraphrasing Froude, it can be said that "the dreams that men use are the only real dreams, the only ones that have life and growth and convert themselves in practical power. All the rest hang like dust about the brain or dry like raindrops off the stones."

COLLEGE EXAMINATIONS—A DEFENSE.

PROF. ZADA M. COOPER.

Examinations have been called a "useless antiquity" but, however antiquated they may be, there seems to be no modern substitute that at all accomplishes the desired result. However, among the arguments presented are some that are not without merit and deserve some consideration in any discussion of the question.

It is said that, if they are given to compel review, they are quite unnecessary, that it is possible to review without the test at the end. In theory, that may be true but it has little basis in fact. Experience has shown that such review will be half-hearted with some students. Other individuals will not even do their regular work consistently, to say nothing of review work, unless the fear or dread of an examination hangs over them. Nothing less will induce them to work. There is a possibility here, which has probably been tried more or less successfully by every teacher. It is to set a certain standard, the attainment of which, will excuse from the examination; requiring students to do the review work, not knowing that they shall not be obliged to take the examination, until

the hour for the examination arrives. The method offers considerable inducement, putting a premium on effort and, though it cannot be applied in all cases, for some courses, it brings excellent results.

We are told that examinations do not, as is claimed for them, teach self-control, and we must admit the truth of that statement in some isolated cases. The unreasoning dread of the test, may cause nervous excitable individuals to lose the little hold that they have upon themselves, and consequently come far short of doing their best. It is impossible to get any statistics bearing upon this point, but observation of many classes, leads to the conclusion that it more often cultivates self-control than lack of it. Though not an unmixed good, the good outweighs the bad.

We shall have to grant that drill in expressing themselves well in a limited time, could be better accomplished in some other way, that is, we must grant it, as an abstract fact, but, is it true in a College of Pharmacy? But for written examinations, would they have any such practice at all? English composition can find no place in the *curriculum* of a College of Pharmacy. However much we may theorize about the advantage to be derived from instruction of that sort, and the necessity for every pharmacist to know how to express himself well, we know no such work can have a place on the schedule. Nor is it the duty of any instructor in a College of Pharmacy to teach the use of the English language, but if examinations were to be eliminated entirely, actual practice would be reduced to a minimum. They give exercise to faculties otherwise somewhat dormant during college years. "Theoretically, when the undergraduate has assembled his thoughts, he is ready and competent to write them, but, practically, he is neither entirely ready nor usually entirely competent." It is not enough to think well, we all need practice in expressing our thoughts. Good authorities believe that an individual "must be able to say what he knows and *write* what he knows or he does not know it." Consider again written examinations. A man will learn, to some extent at least, to say what he knows, in clean clear-cut sentences, without superfluous language. This will be true especially, if the instructor urges the necessity of writing briefly but to the point, leaving nothing to be taken for granted and if he gives little credit for rambling, meaningless generalizations, in lieu of real knowledge of the subject. "The student must express his intellectual gains even as he absorbs them, or the crystallization of knowledge into personal thought will be checked in the beginning."

Probably the objection to examinations which is really of greatest force, is, that it is a poor way to determine what a student knows; that his actual standing is better determined in some other way. It is quite probable that if this were the only reason for giving examinations, there would be almost none. Few teachers make an examination, the only test of a man's knowledge of the subject; there are so many factors to be considered. If there were no other way to decide that question than an instructor's personal estimate, decided from daily work, the judgment of any conscientious teacher would come nearer the truth, but estimating a student's knowledge is a minor point, when considering the advisability of giving examinations.

Another objection that cannot be ignored, is that examinations give rise to a wrong spirit. We find in every class a small number who work for marks alone,

forgetting that mastery of the subject should be their aim. Not only is the real purpose forgotten, but all pleasure in the actual work is destroyed. Examinations are responsible for "cramming" in its worst form, a practice which may give some temporary knowledge but no power. Then, too, they give opportunity for cheating, a despicable habit which demoralizes the individual who resorts to it and the sight of which dishonesty, breeds disgust and contempt and discouragement in the hearts of honest individuals. An instructor may overcome, to some extent these bad effects, by emphasizing the fact that marks do not depend alone upon examinations and by bringing swift punishment upon the offender, when detected.

In this twentieth century, more and more emphasis is laid upon deeds. Men and women are judged by deeds; their efficiency by what they can do in their own particular line. Nowhere, perhaps, is this more true than in Pharmacy. A druggist judges his clerk by his ability to fill prescriptions, to sell goods, to get on with people. Are we not all saying, "What can he do? Can he deliver the goods?" Even in college, we put much stress on laboratory work and upon actual dispensing ability; we give courses in salesmanship; we are constantly teaching students to *do;* emphasizing the ability to *do* and telling them that their success, their very bread and butter depends on what they can *do*. This is all quite proper. Not for a moment, should we belittle this side of the question. On the other hand, are we not getting a one-sided estimate, when we judge men and women *only* by what they can do? Judging only by deeds, is not enough, because there are instances in life where that sort of test cannot be made or where it is inadequate. Take, for instance, the student fresh from college. He may not be able to do everything required of him and yet be potentially powerful. It may be in him to do the very best things, but some other test is needed. Among other elements of judgment what he says verbally, or in writing, must be considered. During his college career, recitations help to train him to speak, as does work in a literary society; examinations play their part in the training to write.

It is only too true that the tongue is used to deceive, and that language is perverted to create all sorts of false impressions, but, still, language is an important medium of expression and an "index of character and ideals." To a certain extent, the use of good language is a matter of gift, but it is also a talent that admits of cultivation. Every man whether gifted or not, ought to be able to talk and write intelligently about his own work. The idea is not that men are expected to produce literature, but that they should be able to tell what they know, to put in concrete form their own ideas, so that others can understand them. Some one has said that "speech and writing, if you get them in fair samples, indicate the extent and the value of a college education better than a degree." The way an individual talks and writes, is, in some measure, an indication of his learning and general fitness, as well as his native capacity.

Graduates, probably, often leave college with a sense of relief in the thought that examinations are over, but they are mistaken. They are only leaving behind one sort, to encounter another sort. In school, examination-questions have asked what they know. Life asks, not only what we know but what we can do

and what we are. "Life accepts no excuses," and this examination never ends but is renewed each day. The student does not always realize that scholarship is not an end in itself, but a means to an end, and that end, is life in its broadest sense, ability for service in his chosen calling and ability to enjoy every minute of that service. If our lives measure up to such standards we are passing life's examinations, perhaps, not as well as we wish we might, for our ideals are always above and beyond our realization, but creditably, nevertheless.

REVIEW OF CURRENT PHARMACEUTICAL LITERATURE.

FRANKLIN M. APPLE, PHAR. D.

PHARMACEUTICAL ERA.

An explanation of the Narcotic Law of New York City is made by Commissioner Goldwater, on pp. 459 and 460.

"A Colorless Ointment of Iodid of Potassium" (p. 463) is an interesting and valuable article.

"The origin and practices of old-time Pharmacy" are the subject of an interesting paper by Mrs. H. Ray Kenaston, on pp. 614 *et seq.*

"The Manufacture of Biological Products," on pp. 453 and 454 is the title of an article, to be continued, by Dr. F. E. Stewart.

"A Corrosive Sublimate Antidote," on pp. 455 and 456, demonstrates the workings of a close-reasoning, ingenious mind and should lead to practical results.

"Colloidal Sulphur" is described on p. 463.

"Glycerine, as a Sterilizing Bath," is on p. 464.

"Proprietaries in Great Britain," (p. 457) is an interesting and timely article and contains the conclusions and recommendations of a Committee which considered the subject of these preparations.

DRUGGISTS CIRCULAR.

"The Validity of Druggists Trade-Marks," (pp. 605 *et seq.*) discusses a "live topic."

"Making Finger Prints Visible," (p. 619) is an interesting article on the subject of identifying criminals.

"Camphor and its Preparations," are entertainingly treated by Prof. Leon Lascoff, (pp. 613-614.)

A formula for a Liquid Disinfectant for the disinfection of rooms, is given on p. 622, and the use of Coumarin and Balsam Peru is suggested on p. 623, to cover the odor of tar.

"Petroleum Confections," are the subject of a paper on p. 629.

"Digitalis and its Pharmacology," a paper by Dr. R. A. Hatcher, concludes in this issue, (pp. 607-610.)

Salicyl-Chlorid is suggested as a possible substitute for Aspirin. (p. 618.)

The use of *Lactic Acid Ferments* as remedial agents, is discussed on p. 620.

A method for testing *Papain* is given on p. 620.

A note on the *"Detection of Lead in Bismuth,"* appears on p. 621.

"Honesty in Advertising," is commented upon, on p. 629.

A good window-display is described under the title *"A Clever Corn Window,"* on p. 645.

"A New Medical Game," describes the despicable methods of a Brooklyn Physician in building his practise, which methods were seriously detrimental to the pharmacists of his locality, (p. 628).

The dangers besetting the careless use of *Sulfonal,* are set forth on p. 621.

The possibility of poisoning by *Pineapples,* (p. 621).

"Blindness following the use of 'Atoxyl,'" (p. 621) is interesting, as this drug has not been generally suspected of any such unfavorable effects.

An able summary of the labors of the National Association of Boards of Pharmacopœia appears on p. 602.

Material of much interest to graduates of the P. C. P. is printed on pp. 509-601, which appeals for careful reading and deep thought.

PRACTICAL DRUGGIST.

"The Chemistry of the Radio-Elements," by Harry F. Keller, (pp. 452-453) is informative and timely.

"How to Treat the Man on the Other Side of the Counter," by E. St. Elmo Lewis, on p. 452, is worthy of careful perusal.

The Sale of Insecticides and Fungicides by Druggists, (pp. 434 *et seq.*) points out the trade-value of intimate knowledge of these substances.

THE APOTHECARY.

"Starting in Business and Making Good," by W. S. Denton, on p. 26, contains most admirable advice.

OUR NEW OFFICERS.

WILLIAM CHARLES ALPERS, Sc. D.

THE PRESIDENT ELECT.

William Charles Alpers, Sc. D., the President-elect of the Association, was born at Hanover, Germany, July 7th, 1851. He attended the High School (Gymnasium) in Hanover, then the School of Technology, and later the University of Gottingen where he took courses in Natural Sciences and Mathematics. His studies were interrupted in 1870 by the Franco-German War, in which he took part. After the war, he came to America and was engaged in teaching for nearly ten years in the St. Matthew's Academy, New York. He entered the New York College of Pharmacy and later took a post-graduate course in chemistry at the University of New York, receiving the degree of Sc. D. in Chemistry. In 1881, he opened a pharmacy in Bayonne, N. J., where he remained until 1898.

After leaving Bayonne, N. J., Dr. Alpers was, for a number of years, manager of The Merck Pharmacy, New York, and afterwards conducted The Alpers Pharmacy on Broadway and 31st Streets. He withdrew from active business in 1905.

He became a member of the New Jersey State Pharmaceutical Society, and was elected its President in 1896. He was a member of the State Board of Pharmacy from 1893 to 1898. In 1890 he was elected a member of the American Pharmaceutical Association, and was Chairman of the Scientific Section in 1896, Chairman of Section on Pharmacy and Dispensing in 1906, and Chairman of the Historical Section in 1913. In 1903 was elected First Vice-President.

He is a member of the Executive Committee of the Revision of the Pharmacopœia and is Chairman of the Sub-Committee on Syrups and Elixirs. Was trustee of the New York College of Pharmacy for three terms until his removal to Cleveland.

He has contributed for many years to Pharmaceutical and Chemical literature and is now editor of the Apotheker-Zeitung, New York. He is the author of many pamphlets and of two books, "The Medicinal Plants of Staten Island," and "The Pharmacists at Work." (Lippincott, 1896.)

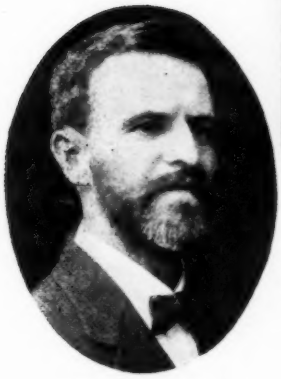
Among Dr. Alpers most notable contributions to pharmaceutical literature is

CHAS. H. LAWALL
1st V. P. Elect

F. A. RUDDIMANN
2d V. P. Elect

LINWOOD A. BROWN
3d V. P. Elect

DR. W. C. ALPERS
President-elect



F. M. APPLE
Council

H. V. ARNY
Council

CASWELL A. MAYO
Council

THE OFFICERS ELECTED AT THE RECENT ELECTION OF THE ASSOCIATION.

his History of the American Pharmaceutical Association, the first decade of which was published in the Journal of 1912, and of which the first portion of the second decade appears in this issue.

He was appointed Professor of Pharmacy and Dean of The Cleveland School of Pharmacy in 1914.

Dr. Alpers has been married twice, first to Miss Bertha Guden, by whom he had six children. His oldest son, William H., is a pharmacist in Los Angeles, Cal., and his youngest son, Otto, is a pharmacist in City Island, N. Y. Both attended the New York College of Pharmacy. In 1913 Dr. Alpers espoused the present Madam Alpers, *nee* Miss Mathilda VanDamm.

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CHARLES H. LAWALL, PH. M.

Professor Lawall was born in Allentown, Pa., in 1871, his father being a druggist of that city. He was educated in the public schools, and in the State Normal School of Bloomsburg, Penn., to which city his family had removed when Charles was five years old. At the age of seventeen he entered the employ of Moyer Brothers, of Bloomsburg, with whom he remained for a period of about four years, leaving them to go to Philadelphia, to enter the College of Pharmacy of that city. He graduated from that institution in 1893, and in 1901 he was appointed Instructor in the Theory and Practice of Pharmacy in his Alma Mater, and Associate Professor of the same department in 1905. From 1891 to 1904 he was in the employ of Smith Kline and French Co., being engaged principally in their manufacturing and analytical departments. In 1903 he became associated with Dr. Henry Leffmann, a prominent chemist of Philadelphia, and, a few years later, he succeeded to the business, which he has conducted ever since. In August, 1904, he was appointed Chemist to the Dairy and Food Department of Pennsylvania and for several years he was Food Inspection Chemist for the National Government at the Port of Philadelphia. In 1909, he was appointed Lecturer in Applied Organic Chemistry in the Wagner Free Institute of Science.

At the Pharmacopœial Convention of 1910 he was elected a member of the Revision Committee and is Chairman of the sub-committee on Inorganic Chemicals.

He is a voluminous contributor to pharmaceutical literature and has published one book on Chemistry, in connection with Dr. Leffmann.

He was married in 1907 and his spouse, who was educated as a pharmacist, acts as his secretary in his work.

His summer-home is at Longport, N. J., where he enjoys fishing and manual labor, in which he finds rest from his mental pursuits.

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EDSEL ALEXANDER RUDDIMAN, M. D., PH. M.

Professor Ruddiman was born at Dearborn, Michigan, December 27, 1864. He is a graduate of the Detroit High School, and received the degree of Pharmaceutical Chemist from the University of Michigan, and that of Ph. M. in 1887 from that institution. He graduated from the Vanderbilt University of Nashville, Tennessee, in 1893, with the degree of M. D.

He was appointed chemist of the Tennessee Board of Pharmacy in 1897 and Food and Drug Chemist of the state in 1907. He is Professor of Pharmacy and Materia Medica in Vanderbilt University. He is the author of "Incompatibilities in Prescriptions," "Whys in Pharmacy," and also of a "Manual of Materia Medica."

He married Miss Jennie Evelyn Perry, of Detroit, Michigan.

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LINWOOD A. BROWN, PH. C.

Professor Brown was born September 21, 1881, in Hancock County, Kentucky, and received his early education in the public schools of Lewisport of that state. In 1897 he began the study of Pharmacy, having for his preceptor Mr. G. Orville Patterson, of Hawesville, Ky. He graduated from the Louisville College of Pharmacy in 1903, being honor-man and valedictorian of the Junior Class and he received the gold medal for highest general average for both junior and senior years. He received the degree of Ph. C. from the University of Michigan in 1904 and was appointed assistant to Dr. E. D.

Campbell, in the course of Quantitative Analysis, where he remained one year, specializing in analytical work. He was employed for a time with the Canadian Copper Co. at Copper Cliff, Canada, leaving there to enter the employ of Merck & Co. as analytical chemist. In 1906 he became Assistant Professor of Pharmacy in the North Dakota Agricultural College and was Drug Analyst of the State. He became Professor of Pharmacy in the college in 1908. In 1909 he was appointed Drug Chemist of the Agricultural Experiment Station of the State University of Kentucky, which position he now occupies. Professor Brown is a member of the following societies:

American Association for the Advancement of Science.

American Pharmaceutical Association, of which he is the Second Vice-Chairman of the Scientific Section.

American Chemical Society, being Vice-Chairman of its Pharmaceutical Section.

Kentucky Pharmaceutical Association.

He is also a Royal Arch Mason.

In June 1907 he espoused Miss Vera Johnstone, of Owosso, Michigan.

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HARRY V. ARNY, PH. D.

Prof. Arny was born in Philadelphia, Pa., in 1868 and began his study of Pharmacy in New Orleans under the instruction of our esteemed fellow-member Fabius C. Godbold. He entered the Philadelphia College of Pharmacy in 1887 and graduated therefrom in 1889. He studied at the University of Berlin and Göettingen from 1892-1896, making the degree of Doctor of Philosophy in the latter year at Göettingen. He was Professor of Pharmacy at the Cleveland School of Pharmacy from 1897, until called to the chair of Chemistry and Physics in the Columbia University, College of Pharmacy. He became editor of the Druggists Circular in January, 1914.

His association activities have been many and various, and at the present time, he is chairman of the New York Branch of the American Pharmaceutical Association and Vice-President of the American Conference of Pharmaceutical Faculties, and a member of the Revision Committee of the National Formulary and the U. S. Pharmacopœia.

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FRANKLIN M, APPLE, PH. D.

Dr. Apple was born at Stone Church, Pa., February 14, 1870. The son of a clergyman, he passed his early days in an educational environment and graduated as valedictorian of the Bangor, Pa. High School in 1885. He entered the profession of Pharmacy at Bangor the same year, and after preliminary education, he came to the Philadelphia College of Pharmacy from which he graduated in 1890, receiving honorable mention. He was then appointed assistant to Prof. S. P. Sadtler. He began business on his own account shortly after, and has remained in touch with the retail business until the first day of this month when he retired from the retail drug business. His activities in the different organizations of the drug business have been so many and various that it would be almost impossible to recount them, and in every position he has occupied, he has been of material service to the trade.

His literary contributions on pharmacal matters would fill a book, and it is needless to recall to the minds of the members the great service which he rendered the membership committee by his paper on "Indispensable Insurance for Pharmacists" which brought in many members to our ranks. He was the originator of the coffin-shape for Bi-chloride of Mercury Tablets. He is now a lecturer on Prescription Compounding at the Medico-Chirurgical College of Philadelphia.

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CASWELL A. MAYO, PH. G.

A complete life sketch of President Mayo was published in the September issue.

before the scientific section were not of tran-

DR. WILLIAM SAUNDERS.

William Saunders, of international fame as a scientist, was born in Devonshire, England, on June 16, 1836, and died at his home in London, Ontario, on September 13, 1914, after an illness of many months. His early educational advantages were meagre, but he succeeded in obtaining a technical training in pharmacy and chemistry and then entered the retail drug business in London, Ontario. His geniality, honesty and untiring industry brought him a fair measure of success. His love of nature led him to the collection of wild plants and insects and he became an ardent botanist and entomologist. Finding many medicinal plants readily obtainable, he began the manufacture of fluid-extracts, which were so efficient that they attracted the general attention of the medical profession and led to the establishment of an extensive and lucrative business, both wholesale and retail. Years later, when he became Director of the Experimental Farms of the Dominion, he transferred the wholesale business to his eldest son, W. E. Saunders, and the retail department to two of his younger sons.

In addition to his business life, Dr. Saunders took an active part in many other lines of work. Besides his scientific work in botany and entomology, he established a farm for fruit growing, and became a zealous member of the Ontario Fruit Growers Association, of which he was a director for many years and President from 1882-1885. He was appointed Professor of Materia Medica in the Western University, London, Ontario, in 1882; was Public Analyst for Western Ontario, President of the Ontario College of Pharmacy (1879-1881), and one of its founders, and a Fellow of the American Association for the Advancement of Science. For over half a century, he was a zealous member of the American Pharmaceutical Association, having been First Vice-President in 1873 and President in 1877.

He contributed a number of exceedingly able papers to the annual meetings of the American Pharmaceutical Association upon "Insect Enemies of Drugs," "Germination of Seeds of Medicinal Plants," "Medicinal Plants of Canada," "Pharmacy in Canada," "Cantharides," "Extract of Cannabis Indica," "Mexican Honey Ant," "Oil of Stillingia," "Rubber from Milk Weed," "Podophyllum Peltatum," "Preparations of Decoctions and Infusions," "Perfumes," "Sachets," and other subjects.

In 1862 he helped to found the Entomological Society of Ontario, of which he was President for the period of 1883-6, and in 1868, with C. J. S. Bethune, he began the publication of the "Canadian Entomologist."

In 1883, Mr. Saunders published his notable book, "Insects Injurious to Fruits," which is justly regarded as a classic by economic entomologists. In 1881, he was appointed by the Governor General of Canada, the Marquis of Lorn, one of the original Fellows of the Royal Society of Canada, and in 1906, was elected its President, the highest position of honor for scientific work in the Dominion of Canada. He contributed largely to the Transactions of the Royal Society. It has been said of him, by an American writer, that "By painstaking study and observation, he has risen to the topmost pinnacle of fame as an entomologist, horticulturist and experimental agriculturist."

In 1885, he was commissioned by the Canadian Government to visit various Experimental Stations in the United States and to report upon agricultural and experimental work in America and Europe. In the following year, he was appointed Director of the Experimental Farms of the Dominion of Canada. Here were carried on, under his direction, a great variety of experiments in breeding and feeding live stock, testing soils and water, growing fruit and ornamental trees of all kinds, selecting hardy varieties, improving the size and quality of fruits adapted to the climate of the Western Provinces, bee-keeping, studies in economic entomology, plant pathology and various other matters pertaining to the welfare of the farming community." The Canadian Entomologist (and from an admirable sketch of Dr. Saunders in this journal, October, 1914, 333, written by his very dear friend and co-worker, C. J. S. Bethune, is taken most of the data of this article), states that "Especially noteworthy was his work in crossing varieties of grain and producing new and improved kinds. One alone of these, the Marquis Wheat, is believed to have added millions of dollars to the value of the wheat products of the prairie country. All information thus acquired has been freely afforded to the farmers by distributions of seeds, and bulletins and reports on all manners of subject."

The ability and work of Dr. Saunders has been recognized in many ways. In 1896, he was given the honorary degree of L. L. D. from the Queen's University at Kingston, Ont., and in 1904, the same degree from the University of Toronto. In the same year, his work was commended by the British Association, and in the following year, he received the distinction of Companion of the Order of St. Michael and St. George, C. M. G., conferred by His Majesty, the late King Edward; and the Mantua gold medal for distinction in scientific knowledge. He was a Fellow of the Entomological Society of London, of the Linnean Society, of the Chemical Society and of the Royal Microscopical Society, an honorary member of the Pharmaceutical Society of Great Britain, and an active member of a large number of scientific societies in Canada and the United States.

A SYMPOSIUM ON THE PHARMACEUTICAL SYLLABUS.

PURDUE UNIVERSITY,
LAFAYETTE, INDIANA.

It is impossible for a Pharmaceutical Syllabus to exactly fit the needs of any school of pharmacy or to express the views of any one individual pharmacist or pharmaceutical educator and still be broad enough to act as a guide for all. Therefore, there is probably no one but has some adverse criticism to offer.

However, we must not lose sight of the fact that what we may consider detrimental to the book, some one else may consider excellent, and what we may deem should be included, may be considered useless by others. With this in mind, I am well satisfied with the book and feel that the committee has done an excellent piece of work, and I wish to thank them for it.

C. B. JORDAN, PH. C.

NEW YORK.

I read with great interest the criticism which appeared in the November issue of the Journal (which I received only yesterday) in the report of the minutes of the last General Session of the Association.

I do not agree with our friend Mr. Hilton in his statement in criticism of the book. But I *do* agree with Mr. Mason in his statement that:

"No one ever would be satisfied with any Syllabus that was gotten out by any one individual because a Syllabus like a law, is a result of a compromise."

It must be understood that a curriculum, Syllabus or outline of studies must represent the ideal of education required and conditional amount of latitude must be allowed; and that the work of the Syllabus Committee represented the work of some of the best minds in the pharmaceutical profession.

It is assumed that a head of such a department is capable of outlining an ideal course which meets the requirements of the educational and practical side of pharmacy.

It remains of course for its intelligent examiners to carefully differentiate between the essential and less essential, and to formulate the examination accordingly.

J. LEON LASCOFF, PHAR. D.

PHILADELPHIA, PA.

In reply to your communication asking for an expression of my opinion of the Pharmaceutical Syllabus, 2nd Edition, I would say that I believe it to be defective in several important particulars. In the first place it attempts to crowd too much into the space of time allotted to the instruction in the recognized and approved course. This might be thought to be an error on the safe side, but as the book is intended as a guide for both State Board Examiners and Educators the condition will constantly arise when the selective action of the Educator will cause the elimination from the course of sections upon which the Examiner will later ask questions.

In the "Quantitative Chemistry" particularly the overcrowding is especially noticeable. Only a small fraction of the work outlined can possibly be accomplished in the 40 hours of laboratory work and 10 lectures given for general quantitative chemistry, (page 114); and in Drug Assaying the 50 hours, similarly divided (page 116) is ridiculously inadequate.

If the sections, with the work of which I am familiar, are so poorly planned, I think I am fair in assuming that many other sections with whose details I am not sufficiently conversant to enable me to criticize, are equally faulty.

The reference works show evidence of hasty or careless compilation. The reference on page 162 to the National Dispensatory, Stille & Maisch, and the United States Dispensatory, Wood & Bache, raises a question in the mind whether many others of less familiar works referred to are similarly obsolete.

The book will serve a good purpose however as a guide or a stepping stone to a more practical work which will probably come at some later time.

CHARLES H. LAWALL, PH. M.

PHILADELPHIA, PA.

I am sending the following, concerning my views about the Pharmaceutical Syllabus. The book was designed to be a guide to the faculties of pharmaceutical colleges, by outlining the courses of study which it was thought desirable to teach in such institutions, and possibly this was its principal value.

Secondly, to inform members of boards of pharmacy of the nature of such courses, so as to indicate the scope of the questions permissible to be asked in board examinations.

Thirdly, it might give to a prospective student of pharmacy, (if he should ever see it) a bird's eye view of the studies he would be compelled to take up, although it is quite possible that after perusing it, he might come to the conclusion of the preacher in the Book of Ecclesiastics, "much study is a weariness of the flesh." The first edition, which was necessarily the work of a few, was published at the expense of the New York Board of Pharmacy.

It met with considerable criticism, some of it of an unfavorable nature. This edition being exhausted, and there being some demand for the book, it was necessary to prepare a new edition. It was thought that the book would be more representative in character if prepared by a larger committee, one representing the three great pharmaceutical organizations of our country, viz, the American Pharmaceutical Association, the Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy.

In pursuance of a request to this effect, a committee consisting of seven representatives from each of these organizations was elected. After the organization of the committee, it was divided into three groups to consider the three main subjects of materia medica, pharmacy and chemistry. In the work of the committee much correspondence ensued which necessarily limited progress, as in a work of this kind there were at times somewhat discordant views. It was not until the Pittsburg meeting of the committee in December, 1912, that the book approached completion. At that time by the close application of some of the members, who worked from 10 A. M. of one day, until 3 A. M. of the next morning much progress was made.

There was considerable divergence of opinion as to the nature, and amount of matter which should be included in the book, those institutions having longer courses of study, pleaded for fuller courses of instruction than was desired by those institutions giving shorter courses, and we were continually reminded that we were preparing a syllabus for a two years course of instruction only.

In some cases a compromise was affected by putting some of the new matter in brackets, thereby indicating that its teaching was a matter of choice. Some of the matter considered by some of us essential, was left out entirely. In the course on Physiology, the Special Senses, (page 38), received so brief mention as hardly to give an intelligent idea of the subject.

The Sub-Committee on Materia Medica decided that the different subjects of that branch should be classified according to their action on the human body, but notwithstanding the vote, it was not done, the former classification being retained.

The general committee also by vote, ordered that the American Pharmaceutical Association be asked to take charge of the publishing and sale of the book, as the majority felt that the facilities of the association for this work, would give it a wider distribution, and greater prominence. Why this explicit command of the general committee was not carried out by the executive committee, I have never been able to learn.

It has been urged that the Syllabus is too technical for members of boards of pharmacy. While this objection may hold good in some cases (as politics at times influences appointments), it by no means holds good in all. A criticism might be made regarding the speed with which the Syllabus was adopted by the different boards of pharmacy. This, while complimentary to the book, hardly implies a careful examination of it, but would lead one to infer that action was contagious. It may be urged against the Syllabus that the different subjects are not taken up in the best manner, some other arrangement would have been better, but it is expressly stated on page 16, "It is not designed, however, to interfere with such flexibility in courses of study and freedom in methods of instruction as ought to exist in pharmacy schools." Special attention is called to Chapter VI, on Reference Works, this I consider a most valuable compendium of the literature pertaining to pharmacy.

Let me say in conclusion that no one of the committee considers the Syllabus a perfect book, but it is undoubtedly a step in the direction of the unification of courses of instruction in colleges of pharmacy.

CLEMENT B. LOWE.

DETROIT, MICHIGAN.

The Pharmaceutical Syllabus has been criticized here and there by some individual because it did not seem to *him* what it ought to be. To me this is in a certain sense a certificate of character. The Syllabus ought not to represent the ideas of *any one man*. When it does that it is vicious: it is lop-sided: it is eccentric: it is unbalanced.

The Syllabus, as it stands to-day, is the result of the wisdom of twenty-one men, who for the most part have worked honestly and earnestly in an effort to get out something that would be a credit and benefit to American pharmacy. But when twenty-one men, or a majority among them, agree on any proposition, it is only as the result of compromise. You see this sort of compromise everywhere. President Wilson may have his idea of what a tariff or a revenue law should be, but when a house of representatives and a senate bring their wisdom to bear on the problem, changes and modifications are inevitable. The final result is not completely satisfactory to any one man—and it ought not to be.

The Syllabus may possibly be open to some valid criticism. For the most part, however, it represents all that is humanly possible at this time. The next edition will be better, and every future edition will register a distinct improvement. Fundamentally the whole Syllabus movement is one of vital importance to American pharmacy. Upon it will largely be based the educational growth, development, and unification of the future.

More than that, the Pharmaceutical Syllabus brings together for the first time examining boards on the one hand and colleges on the other. Through the medium of the Syllabus

these two groups of men are now working together in an earnest effort toward harmony and mutual understanding. This means a great deal in itself, wholly irrespective of what book or books may result as a consequence.

HARRY B. MASON.

BOONVILLE, MO.

The Pharmaceutical Syllabus, is not perfect; nor will it ever be. Criticisms on its contents will be made just as are being made on the pharmacopœia. This is perfectly natural, and it is well that such is the case. Otherwise there would be no improvements made. Progress and improvements come only after criticisms. The strength of the movement is in the fact that the Syllabus is being promulgated by three coördinating bodies, the American Pharmaceutical Association, the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, and we should recognize that fact. The American Pharmaceutical Association is represented on the committee by only a certain part, and can therefore control the Syllabus to that extent only. 'Tis true that our beloved association represents the best there is in pharmacy, professionally and morally, and must, therefore, take the lead in every movement that pertains to the betterment of pharmacy. If, however, the Syllabus is to become a standard for all, other bodies must have a right to take part in its development. And that is just the condition at this time. The Syllabus is being promoted by delegate bodies, and in that way becomes a standard for all. I don't believe that a Syllabus, controlled entirely by the American Pharmaceutical Association, can ever obtain a legal recognition. The National Formulary, if it shall continue to hold its legal status, must, in the end, emanate from a different source than it now does. It must be revised by a delegate convention, as is the pharmacopœia. Had President Beringer's suggestion been, that the Council take careful consideration of the revision of *the* Syllabus, instead of *a* Syllabus, no objections would have been raised against his criticism. The Syllabus already exists, and we are only interested in its revision and perfection.

Let us then, encourage the committee having in charge the revision of the Syllabus, and in a proper spirit bring about further improvements in the work; and not destroy what has been done. The Syllabus has been approved and accepted by the pharmacists generally, and several schools and boards are adjusting their work to conform to it. The present revisions of the Pharmacopœia and the National Formulary will not be free of errors; and yet, as loyal Americans, the pharmacists will accept them as their guide. And I believe the Syllabus will be accepted in the same spirit. The American Pharmaceutical Association did well in not overthrowing the work of the old committee, and I believe when another revision is made more harmony and satisfaction will prevail, and the pioneer work of our New York brothers be better understood and appreciated. I, too, find objectionable features in the Syllabus and would eliminate some things and change others, if I alone were interested; but I realize that the field is large, and that others have a right to their views. The mere fact that this movement has brought out a spirited discussion, means that it is of value; otherwise the Syllabus would have died of inanition. My greatest objection to the course outlined in the Syllabus, is the inclusion of the subject of physiology. This subject should be covered by the student while he is attending the common or public school, and his time used in the college of pharmacy, mastering a business course as applied to the practice of pharmacy, as now conducted. Let us therefore accept the work of the Syllabus committee, and encourage and aid it, in perfecting the work, so that in time the desired uniformity in our college courses and board examinations will be realized.

WM. MITTELBACH.

SEATTLE, WASHINGTON.

Regarding an expression on the recently published Pharmaceutical Syllabus will say that it is my opinion that we should use it, and give it a chance. I am inclined to think that much good can be done by carefully following the lines laid down in the Syllabus, and until the time is ripe for further improvement, I would consider it unwise to change it in any way. I believe that the committee in charge of the work has spent much time and has looked into this matter carefully, and I believe it is due the committee to test the present Syllabus as it is published.

C. OSSEWARD.

PHILADELPHIA, PENN.

In reply to your letter of November 2nd asking for my views of the recently published Pharmaceutical Syllabus, I would state that although I cannot agree to many of the things as set forth in the present Syllabus, I am heartily in accord with the objects and *personnel* of the Syllabus Committee. I am of the opinion that if we are ever to have uniform instruction in pharmacy and coöperation between pharmaceutical instructors and state examiners, it can only be accomplished through a medium such as the Syllabus.

I am also of the opinion that a Syllabus prepared independently by any one of the three coördinate bodies now in charge of this work, without the help and suggestions of the other two, would prove a failure and, therefore, feel that the present plan of placing this task in

the hands of a committee, composed of members of the American Pharmaceutical Association, the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy, cannot be improved upon.

I heartily approve of the system adopted by the Syllabus Committee of classifying all knowledge relating to Materia Medica, under the general head "Pharmacology" and have, therefore, in my text-book on "Biochemic Drug Assay Methods" given, *verbatim*, the definitions of the Syllabus for Pharmacology, Pharmacognosy, Pharmacodynamics and Therapydynamics. I find, on practical application of this plan, that my students at the Medico-Chirurgical College are better able to coördinate the knowledge of Materia Medica than was possible to acquire, under the old system in which the importance of Pharmacodynamics was lost sight of.

PAUL S. PITTENGER.

PHILADELPHIA, PENN.

A National Syllabus which aims to provide an outline of subjects which should be taught in colleges and departments of pharmacy is an actual need. The American Pharmaceutical Association represents the professional and scientific element better than any other pharmaceutical organization in America and is qualified to frame a proper syllabus.

The book which has been prepared is entirely too voluminous and detailed and, in my opinion, cannot be used successfully because too much has been squeezed into it to adequately teach all of its subjects to even very bright students in the time allotted. It would be far better to establish a minimum basis which the colleges, large and small, can conscientiously follow in a two-year course than to try to cover the greatly enlarged field of modern pharmacy in the way demanded by the present Syllabus.

We are advised that the book is not intended to be followed in all of its details; then why send it forth at all? Why not remedy its defects at once and secure universal acceptance?

JOSEPH P. REMINGTON, PH. M.

NASHVILLE, TENNESSEE.

The Pharmaceutical Syllabus is not a perfect guide for the educator or the examiner. There is work outlined in it which may seem to be necessary in one college but not in another. Latin, for example, may be necessary in some colleges which require comparatively little preparatory work, while it may not be necessary in some colleges which require high school graduation. Why, the future pharmacist needs a course in business more than the future grocer or other commercial man, is not entirely clear. The introduction of doses into the Syllabus, does not seem necessary.

And so we might go on and find other points on which we disagree. Nevertheless, the Syllabus should have the support of every pharmacist. It is work in the right direction. The *curricula* of the colleges and the examinations of the boards, are getting more uniform and closer together. No organization of any kind could be better fitted to accomplish this end than representatives from the American Pharmaceutical Association, the National Associations of Boards of Pharmacy, and the American Conference of Pharmaceutical Faculties, and if they fail, there is but little hope for any other body of men to succeed.

Statements made in the preface and in the introductory notes of the Syllabus, make it plain what it is. It is intended to be taken as a guide, not followed literally, and as such I am a strong supporter of it and am convinced that much good to pharmacy will result from it.

EDSEL A. RUDDIMAN.

THE UNIVERSITY OF KANSAS, LAWRENCE.

"The book accomplishes what it aims to do, in giving a concise statement of a scheme of instruction. It furnishes, not only to instructors but to many others seeking such knowledge, a systematic arrangement which is helpful to the instructor. It indicates the general scope and character of instruction which might be given by the teacher and the work to be accomplished by the student and this partakes of a national rather than of a local character which is decidedly advantageous. A conscientious instructor realizes the necessity of getting out of his local environment and getting hold of a broader and more comprehensive view than his environment is apt to give him.

"I understand the work as one that is not designed to interfere with the flexibility of courses of study. Nor does it in any way suggest the possibility of detracting from the value of the personality of the instructor.

"To my mind the work is in advance of the present time in reference to the basis of examination questions for use by boards of pharmacy and possibly many of our teachers. That is to say, boards of pharmacy and instructors alike may justly feel at times that details of the course presented in the Syllabus cannot be met by present conditions, or rather the present conditions do not demand such details. To do the amount of work that is required in the Syllabus without degrading it into a quiz-compend course would require considerable skill on the part of the instructors. This is, however, a material point which every instructor is to work out for himself."

L. E. SAYRE, Dean.

THE STATE UNIVERSITY OF IOWA.

"A famous preacher once remarked that he had found a lot of human nature in this world" and this statement I believe applies to some of the criticism of the Syllabus.

The Syllabus is not perfect. No one expected it to be perfect and some of the criticism is, no doubt, just, especially the typographical errors, which are inexcusable.

The Syllabus, if adopted as a tentative outline of a minimum course of study, will help to unify the courses of instruction in our colleges and if used as a basis of state board examinations will correlate the work of the two.

The future editions of the Syllabus can be improved and criticism, if of a *constructive nature* is to be desired.

The committee representing the American Pharmaceutical Association, The American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy is thoroughly representative of American pharmacy and they should have the coöperation of all in their honest effort in preparing a work which marks one of the great epochs in American Pharmacy.

WILBER J. TEETERS, Dean.

STATE BOARD OF PHARMACY OF INDIANA.

"I have found the old Syllabus a great help in the preparation of Board Questions, and I think the new Syllabus is a great improvement over the first one. No board member should fail to use the Syllabus if he wants to grow and improve in his board work."

WM. H. RUDDER,

DETROIT, MICHIGAN.

"As to the practicability and fitness of the Syllabus there will always be differences of opinion among individuals, and undoubtedly each school teacher or examiner will use such portions as seem to him best and reject the rest. This is the best criterion of its usefulness."

WILBUR L. SCOVILLE, PH. D.

DETROIT, MICH.

"In examining the Pharmaceutical Syllabus which came to me sometime ago, I have been very favorably impressed with the work of the committee which has had this matter in hand. The committee has been very fortunate in the members comprising it as well as in the method of its selection, constituting as it does, the most comprehensive representation of all the various workers in pharmacy.

"While it is impossible in a work of this kind to meet in detail the approval of any one man or body of men (and I presume this includes the committee itself) yet it is this very fact—that of being a compromise—a compromise of ideas of men studying the needs of pharmacy from every angle—that gives it its especial value. In just the degree in which it might fail to be a compromise, or the degree in which it might fail to reflect accurately the composite idea of the committee representing pharmacy as a whole—in just that degree would it fail of its mission.

"The writer believes that a future edition will doubtlessly be an improvement on this one, certain defects may be discovered, some inconsistencies ironed out but that this reflects no discredit on the work of the present committee which work will, he is sure, be of great assistance to members of examining boards from whose view point more especially he considers the work."

LEONARD A. SELTZER, PH. C.

PHILADELPHIA, PENN.

"Responding to your letter desiring information concerning my opinion of the recently issued Pharmaceutical Syllabus, I would say that the classification of the science that treats of drugs and medicines, their nature, preparation, administration and effect, under the general head 'pharmacology' meets my hearty approval. This is of course an old classification and the Syllabus has been criticized for going back to it, but no less authority than Hermann, Professor of Physiology in the University of Zurich, and one of the leading authorities in experimental vivisection, in the introduction to his 'Experimental Pharmacology,' a hand book of methods for studying the physiologic action of drugs, said, 'Pharmacology, in its widest scope, embraces the study of drugs from all points of view, and the information thereby acquired may be useful under the most diverse conditions; to the physician, to enable the recognition and proper treatment of cases of poisoning, or to permit of the use of drugs for therapeutic purposes; to the public, to permit the avoidance of noxious substances; to the physiologist and pathologist, to enable the application of information derived from the study of the action of poisons to the advancement of their sciences. The study of pharmacology may therefore be limited according as one or more of these points of view occupy the first place in the mind of the investigator.'

"The definition of 'pharmacology' given by the Pharmaceutical Syllabus includes pharmacognosy, pharmacy, pharmacodynamics and therapy-dynamics. This is in harmony with the definition published in the Standard Dictionary which defines 'pharmacology' as 'the science

of medicines, their nature, preparation, administration and effects: including pharmacy, pharmaco-dynamics and pharmacognosis.' The definition is likewise in harmony with Webster's Dictionary and with the Century Dictionary.

"The advantage of this classification to pharmacy and the pharmacist becomes at once apparent in the work of classifying the newer vegetable drugs, as anyone can testify who has had experience in doing this work.

"In the next place, this classification associates in proper relationship knowledge of all the branches of materia medica science, and brings out very clearly the fact that pharmacy, as a branch of pharmacology, is the science and art of preparing, preserving, compounding and dispensing medicine, and that it is related to pharmacognosy, which 'treats of the identification and selection of vegetable and animal drugs;' that it is also related to pharmacodynamics, which 'treats of the action of medicines on healthy organs;' and is also related to therapy-dynamics, which 'treats of the action of medicines on diseased organs.'

"All of these branches of pharmacologic science are correlated and mutually dependent. Consequently, no person can become proficient in the knowledge of that science without acquiring an education in the science of the materia medica as a whole. Proper knowledge of the method of applying medicine to the treatment of the sick requires some acquaintance with pharmacognosy, pharmacy, pharmacodynamics and therapy-dynamics, and special knowledge of the action of drugs on healthy and diseased organs. The medical curriculum should therefore embrace the study of pharmacology. To select, prepare, preserve, compound and dispense medicines requires knowledge of pharmacodynamics and therapy-dynamics, as well as knowledge of pharmacognosy and pharmacy. Therefore, the pharmaceutical curriculum should include the study of pharmacology as a whole, with special attention given to the selection, preservation, preparation, compounding and dispensing of drugs.

"Proper education in pharmacologic science on the part of both physician and pharmacist would bring the medical and pharmaceutical professions together in the study of the common science and elevate the practice of pharmacy to a profession in fact as well as in name.

"In a monograph entitled 'An old system and a new science' published in 1882, I advocated a return to the classification in which knowledge relating to the materia medica is embraced under the general head 'pharmacology;' in my address as Chairman of the Section on Materia Medica, Pharmacy and Therapeutics, delivered at the Forty-seventh Annual Meeting (1896) of the American Medical Association, I again suggested a return to this classification. In numerous papers on the subject since contributed to medical and pharmaceutical societies and press, I have repeated the same plea again and again.

"It was therefore gratifying to me when the National Committee representing the boards and schools of pharmacy of the United States adopted this classification. It was also gratifying when the classification was incorporated into the New York State Pharmacy Law, and adopted by the Board of Regents of the State of New York, for the guidance of teachers of pharmacy in that state.

"While I am fully in harmony with the objects and plans of the Syllabus Committee, I am not as fully in harmony with the Syllabus itself. I am aware that the Syllabus as it now stands represents a large amount of work by experts who have had much more experience than has fallen to my lot as an educator, and I therefore hesitate about criticising the Syllabus. In conducting my Chair on Materia Medica in the Department of Pharmacy and Chemistry of the Medico-Chirurgical College, I have associated with me a specialist in pharmacognosy, also a specialist in pharmacodynamics, in so far as the so-called physiologic testing of materia medica products is concerned. We are using the Syllabus as a basis of our work, and modifying the plan to meet conditions pertaining thereto. As I understand the object of the Committee, it is to place in the hands of the teaching faculties a general plan for teaching pharmacologic science, the same to be modified by each institution to meet its own requirements, hoping thereby to promote and facilitate the development of the plan of the Syllabus, and make it practical. The plan of the Syllabus is therefore in the state of evolution, and does not pretend to be completed.

"I am well aware that leading educators in pharmacy are entirely opposed to the plan of the Syllabus Committee. Some of these educators are my seniors and have had far more experience in teaching than I have. In this respect, therefore, they have an advantage over me. On the other hand, I feel that I have an advantage over them in the fact that I am a physician as well as pharmacist, having graduated from the P. C. P., and the Jefferson Medical College, and practiced both professions for some years, although not in conjunction. I have also had the peculiar advantage resulting from a lifetime study of the problems pertaining to the relations which I believe should exist between the medical and pharmaceutical professions. I believe that pharmacy and medicine are branches of the same science and practice; that they are closely related and mutually dependent; that the only justification for the existence of either is the prevention and cure of disease; that the application of drugs for prevention and cure requires a medical education; that the selection, preservation, preparation, compounding and dispensing of medicines requires a pharmaceutical education; that the practice of the physician and pharmacist should each be limited to its own sphere, except at the point where both from necessity overlap, and that in this middle ground of domestic medicine, both should consider the interests of the public as paramount to selfish interest, and

coöperate with each other in protecting the public from the results of ignorance and greed on the part of those who would dishonestly exploit the sick-room for gain.

"To the extent that the adoption of the Syllabus for the teaching of pharmacologic science in both medical and pharmaceutical schools can be made subservient to these objects, I am entirely in harmony with the National Syllabus Committee."

F. E. STEWART, M. D.

PITTSBURG, PENN.

In reply to your request will say that the Pennsylvania Pharmacy Board at a recent meeting approved and adopted the second edition of the Pharmaceutical Syllabus, excepting however, the matter pertaining to physiology and to commercial pharmacy, the latter plays no part in the proper preparation of medicines, and an imperfect knowledge of the former subject, may only serve as a suggestion to counter prescribing.

It appears to be high time that more or less uniform methods are adopted by schools of pharmacy, in instructing their students, and by pharmacy boards, in the examination of those who aim to hold themselves up to the public as being proficient in the art of preparing medicines. The Syllabus may be regarded as a primary step; many steps may be needed before perfection is reached, but after the first step is taken there is encouragement for further progress.

Personally, I take little interest in entrance-requirement methods of teaching *et cet.* My interest centers on the finished product, and I have a private opinion—which may not look quite polite if put in cold type—of the system which turns out as finished pharmacists, students whose conceptions of an element are as follows:

"Anything having a chemical formula, or can exist alone, marble is an element." "Any substance which is found existing naturally in the earth." "One of the constituents of the atmosphere." "Anything which exists and is essential to life." "Any substance which may be obtained from the ground." "An element is what bodies are made of."

The above replies were given by graduates in pharmacy, at the recent board examination, whose college record shows that they were graduated on a record of "sufficient," and they are here given to show that a *perfect* pharmaceutical syllabus will not cure all of our ills.

LOUIS EMANUEL, President.

BUFFALO, N. Y.

Those concerned in the production of this volume have felt that they were engaged in constructive work. The authors of this work have been traveling mostly over an uncharted sea. The Committee itself had many discussions before reaching a substantial agreement upon many questions of detail. Under these circumstances it is not at all singular that earnest workers in the cause of pharmacy outside of the Committee, find things to criticise in the volume.

Sharp differences of opinion have often been found in New York State where the Syllabus idea has been carefully fostered. Yet, after ample discussion unanimous agreement was reached. Thinking the experience of New York State may be of service to all interested in the Syllabus, pro and con, the following records are submitted: As a word of explanation it might be stated that the "Pharmacy Council" in the State of New York consists of the deans of its five colleges of Pharmacy and of the Assistant Commissioner in charge of Higher Education.

EXTRACT FROM THE MINUTES OF THE PHARMACY COUNCIL.

To the Pharmacy Council of the State of New York:

The Syllabus Committee of this state takes pleasure in reporting that after several years' labor the second edition of the *National Pharmaceutical Syllabus* has been completed and published. The new volume follows the general plan of the first edition. The principal change made is in the addition of 100 hours each to the subjects of Pharmacy and Materia Medica, so that a minimum course of 1200 hours is outlined instead of 1000 hours.

Probably no member of the Syllabus Committee of twenty-one, representing the colleges, the boards and practical pharmacists, would claim that the work is perfect. It represents a compromise between many conflicting opinions. The influence of the schools giving courses of two years approximating 1200 hours of instruction tended to reduce the material contained in the volume, while the interests of schools giving three year courses or covering 1800 hours or more, tended to increase the subject matter of the book. It is recognized by all those who have carefully examined this edition that its contents cannot be properly taught in 1200 hours.

This raises the question as to whether an injustice will be done the schools with 1200 hour courses when the Syllabus is adopted by boards of pharmacy as a guide of their examinations. In this state this difficulty is happily avoided by our system of selection questions by which an examiner is permitted to answer ten questions out of a total of fifteen. It is not believed that this theoretical difficulty will prove to be an actual one in any state.

The first edition was prepared for a syllabus period of five years. The second edition however, has no specific time for operation. It was thought wise by the committee that as the book is more or less experimental it would be better to preserve the opportunity of revising

it if found unsatisfactory in two or three years, or if found acceptable to those interested, to use it for an indefinite period.

The question arises as to what may be involved by its adoption either by schools of pharmacy or by boards of pharmacy. To give light upon this subject a number of quotations from the book itself are given.

Page 8, line 9, "But a syllabus like a living language is necessarily in process of constant change. It must not be used to dam the flow of increasing knowledge either of fact or practice."

Page 16, line 1, "Definition. The Pharmaceutical Syllabus is prepared to indicate the general scope and character of the instruction to be given by the teacher and the work to be done by the student."

Page 16, line 10. "It is not designed, however, to interfere with such flexibility in courses of study and freedom in methods of instruction as ought to exist in pharmacy schools."

Page 17, line 23. "The Syllabus is intended to allow the individual teacher or school the widest possible liberty as to order and grouping of these topics and method of presentation. Its object is to specify what topics are to be taught by the schools and expected by the boards without concerning itself with the manner in which this result is reached by any school, teacher or book."

Page 141, line 1. "The selection of the particular line of experiments to accompany a course of lectures upon pharmaceutical *technique* must necessarily be left largely to the judgment of the instructor, the choice of the latter naturally depending upon his opinion of the portions of the subject which need the emphasis of laboratory work."

Page 146, line 10. "Prepare the following official preparations and such additional U. S. P. or N. F. preparations as the time will permit as far as possible selecting such additional preparations from those which especially require skill and careful manipulation."

Page 149, line 4. "The time allotted for dispensing pharmacy should be arranged to give a liberal number of hours for actual work in the compounding of prescriptions."

With this indication of the purpose and spirit of the work it is not believed that it will be found to be a harness that will gall the user, nor a rigid mould that will prevent initiative or kill enthusiasm in either teacher or examiner. We, therefore, recommend that it be adopted by this Council and recommended to the schools of pharmacy in this state and to our Board of Pharmacy for adoption by each of such organizations.

Respectfully submitted,

(Signed) WILLIS G. GREGORY,
AUGUSTUS S. DOWNING,
HENRY H. RUSBY,
State Syllabus Committee.

A. Voted unanimously that we recommend to the pharmacy schools of the state the adoption of the second edition of the *National Pharmaceutical Syllabus* as a general guide for courses of instruction to take effect July 31st, 1914.

B. Voted unanimously that we recommend to the State Board of Pharmacy the adoption of the second edition of the *National Pharmaceutical Syllabus* as a general guide for examination of candidates for pharmacists' licenses to take effect July 31st, 1916.

At the first meeting of the Board of Pharmacy of the State of New York, following this action by the Pharmacy Council and after considerable discussion of the whole Syllabus proposition the Board voted unanimously to adopt the second edition of the *National Pharmaceutical Syllabus* as a general guide for the examination of candidates for pharmacists' licenses, to take effect July 31st, 1916.

It might be stated in passing that under this action of the Board of Pharmacy was the belief that whatever inconsistencies or defects there might be in the Syllabus they would not be at all commensurate with the evils of an entire lack of standardization in the teaching of the Colleges and the examinations of the Boards.

WILLIS G. GREGORY.

Dr. Alpers, Mesdames Tschirch and Alpers, Dr. Tschirch, at the Tschirch Villa, Berne.

APOTHECARIES ABROAD.

ON THE GRAND TOUR WITH THE

NEW YORK DEUTSCHER APOTHEKER VEREIN.*

PROF. GUSTAV BACHMAN Minneapolis.

July 2nd, 1914, our party, of about 130 pharmacists representing nearly every state in the Union, sailed on the S. S. Barbarossa for Europe, under the auspices of the German Apothecaries Society of New York City.

On July 13th we arrived in Bremen.

Our visit in Berlin of only three days will always be remembered with great interest and pleasure. We were here the guests of the German Apothecaries' Society, an organization composed of pharmacists from throughout Germany. It owns a large manufacturing establishment and wholesale house. In connection with the factory, is a colossal club-house in which reception-rooms, banquet-halls and rest-rooms are arranged.

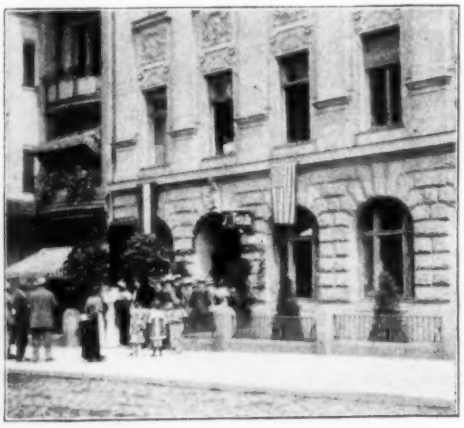
Our party was invited to meet at the Club House soon after arriving in Berlin. After listening to an address of welcome by the president of the association, we were divided into a number of groups for the inspection of the establishment, the several groups being distinguished by different flowers, such as white rose, red rose, carnation, etc. Competent guides were assigned to each group, who explained the points of interest both in German and in English. Contrary to our expectations, we saw few patent medicines and proprietary articles in stock. Most of the floor-space was occupied with large pharmaceutical and analytical laboratories, where we saw official preparations in process of manufacture in large quantities. One room in the factory was used exclusively for filling ampoules with potent liquids. In another spacious laboratory we saw the spreading of plasters on linen by machines, gauze bandages made into long rolls and cut into pieces of different widths. After partaking of a banquet fit for the gods, we visited the Institute of Pharmacy of the University of Berlin. Dr. Thoms, the head of this department, gave us an interesting and instructive lecture which was illustrated with spectacular experiments. The most interesting experiments were made with liquid air. After this we inspected the pharmaceutical laboratories. This Institute was recently built and is therefore well planned, lighted, ventilated and equipped with the latest scientific apparatus. All museum cases containing chemicals that are affected by light, have amber colored glass doors.

Our next visit was to the Botanical Gardens of the "U" of Berlin. The gardens are

under the direction of Dr. Gilg and are the most complete of their kind. Trees, shrubs, flowers and medicinal plants, indigenous to every country in the world, are to be found in the gardens where they grow under conditions similar to those prevailing in their native country. Here we saw the wonderful vegetation of Japan, then suddenly found ourselves in Africa then in Cuba, etc. When we came to the United States gardens I could imagine myself in Minneapolis. In Berlin our attention was called to the two kinds of stores; namely, the Apotheke meaning a pharmacy and a Drogerie meaning a drug store. Upon inquiry, we learned the differences between these two stores. An Apotheke is a pharmacy which can only be managed by a registered pharmacist who confines his activity to selling drugs and the filling of prescriptions, while a Drogerie or drug store can be managed by anybody. Such a store carries druggists' sundries, patent medicines and sick room supplies. No prescriptions are allowed to be dispensed in a Drogerie. The government designates where an Apotheke is to be located and the number to be established. Only one Pharmacy is allowed in a community of 10,000 people. The prices charged for a prescription are also regulated by law. The price is based on the cost of ingredients, the time required to fill the prescriptions and the cost of the container. Prescriptions are not numbered nor placed on file, but are always returned to the patient. All prescriptions containing liquids are dispensed by weight. No graduates are, as a rule, to be found in the store. Poisons are kept in closets and can be reached only by unlocking three doors. Phosphorus must be kept in the basement, where a specially built-in closet is constructed in the foundation of the building.

Arriving in Vienna we were the guests of the local pharmacist's association. A splendid

BERLIN. COLLEGE OF PHARMACY, UNIVERSITY OF BERLIN.



BERLIN. AMERICANS ENTERING GERMAN APOTHECARIES ASSOCIATION.

program was planned for us. The first day we visited the University, whose organization dates back to the year 1365. It is to-day a model institution, beautiful, spacious and well arranged. A rare opportunity was extended to our party to inspect the Pharmacy Depot of the Military Department. Considering the excitement preceding the declaration of war between Austria and Servia, we were indeed fortunate to be given the privilege of visiting this department. Here the supplies for the entire Austrian army are made. Our guide was an officer, who was very courteous and willing to explain things in detail. We saw the preparation of gauze bandages, adhesive plasters and absorbent cotton. These packages were pressed into flat pieces in order to reduce their bulk so that they would take up less room in a soldier's knapsack. Every soldier is provided with a case containing supplies for "first aid" to the injured. In Vienna we visited the oldest Apotheke in Austria. It was established in 1551. Here they prepare everything needed in a pharmacy. They employ 30 people who are busy making pills, tablets and other preparations not, as a rule, made by pharmacists in the United States. The proprietor of this store said the physicians of Vienna prescribe many American-made preparations, because of the fact that so many American physicians, who are taking post-graduate work, introduce the proprietary articles.

The next city of special interest to me was Munich. I spent an afternoon in the German Scientific Museum. Here we were shown a large glass globe, possibly 8 feet in diameter, into which was placed a miniature Universe—the earth, the sun, the moon and the planets with their moons, and all these, one could see revolving in a correct astronomical manner. One could see just how an eclipse of the sun occurs, and at what time of the year and just what part of our earth would see it. It is the most marvelous and wonderful work of science I have ever seen. Every other instrument in that department was working upon some mathe-

matical principle. The first instrument invented in the field of electricity, was exhibited and all others down to the very latest. This was also true of printing presses, photography, musical instruments, etc. I saw the first "Condenser" invented by Liebig, and all the other varieties of condensers, invented since his time. I saw there, the first Bunsen burner made, which, of course, is now greatly improved.

A side trip to Berne was arranged by Dr. Alpers while we were in Lucerne, Switzerland. Only about fifteen out of our party embraced this rare opportunity. We were entertained at dinner by the Swiss Apothecary Society and in the afternoon were invited by Prof. Tschirch to visit the Pharmacy Institute of Berne University. Afterwards a reception in honor of our party was given at Prof. Tschirch's villa. I consider this the best treat of the entire tour; first of all to have come in personal contact with Prof. Tschirch, an authority in botany and pharmacognosy, and, secondly, to have been one of the guests at his home. It is good to be in the presence of such a great man. The Pharmacy Institute is not of the latest up-to-date kind, yet is complete in every detail. Prof. Tschirch prides himself upon having the most complete pharmaceutical library and museum in the world. The museum is a wonder; it contains many thousands of samples of original packages and containers of drugs from all parts of the world. Many of his specimens cannot be duplicated to-day. The professor has ordinarily from twenty to thirty students and hopes never to have more as he makes it a point to give each student personal attention at least once a day. Is it any wonder, therefore, that under such a teacher, Switzerland produces eminent pharmacists?

On Aug. 1st we arrived in the city of Heidelberg. This city has many old historic sights. The famous Heidelberg Castle is located here. Germany had declared war on Russia by this time and we found it rather difficult to visit places of interest. The University was no longer in session but we were able to go through several of the buildings. The guide showed us the room where the final oral examinations are held. The examinations are very hard and occasionally a candidate for a degree, failing to pass will take his life rather than to be disgraced. Students from all countries attend this famous university. Several of our party climbed a hill, of several thousand feet in height, to see the Heidelberg observatory. We were well repaid for our exhausting trip. We were shown a number of powerful telescopes and an instrument which records the vibrations of the earth. Out of curiosity we asked to be shown the chart showing the disastrous earthquake of San Francisco. This chart was produced, much to our astonishment.

Darmstadt was the next city we visited. Merck's Chemical Works are located here. Our party was invited to inspect the factories, but the day before we arrived in Darmstadt, about 5000 of the employees were called to the army, which necessitated the closing down of the factory temporarily. We were greatly disappointed at not being able to visit this noted establishment. Here the party broke up, some remained in Germany thinking it to be safer to remain than to leave, while others left for London. Only fourteen out of the party arrived in the United States on August 20th.

TRUMAN GRIFFIN Minneapolis.

Responding to a request for a recital of my experiences on my trip abroad with the German-American Apothecarys' Society of New York City, I will say, I had a most interesting and instructive time and, after we arrived in the war zone, a most exciting time; certainly one hard to duplicate. The ambition of my life to make a foreign tour was fully satisfied.

I visited sixteen cities and the five countries: Germany, Austria, Switzerland, Holland and England. Aside from the educational enlightenment pertaining to pharmaceutical matters acquired, my interest was centered on the characteristics of the people as expressed in their dress, their mode of living and the architecture of their buildings. While the people as a whole do not differ in appearance essentially from those of our own country, I was impressed with the peculiar head-dress of the women of Leipsic, consisting of a very large black ribbon about eight inches wide and two feet long, worn on the back of the head; the wooden-shoe clad people of Holland, and the many colored and peculiarly styled dress, adorning the women of Bremen, were of great interest. The peculiar homes of the people, some of Flemish styles and the peculiar gabled roofs, covered with tiles and even some with sodded moss were very interesting. The architectural beauty of all their government buildings, museums, universities and cathedrals, adorned with works of art and sculpture, and filled with the finest specimens of craftsmanship, faithfully represents the work of men with ideas and imagination.

The palaces of the Imperial families were not impressive, architecturally. Their massiveness, however is pronounced. Their parks and gardens plainly show the work of the landscape artist. Standing at their entrance, you look down broad avenues and roadways, bordered with shrubs and trees, across splashing fountains and broad pools of water, over the many hued colors of their flower beds, on to vine clad walls and columns. Time will not permit me to describe, except in a very general way, the sights I saw; Bremen: Cathedral with its lead chamber of mummies, and the famous Rathskeller. Berlin: University and Pharmaceutical Institute with Botanical Gardens. Auto-ride through the city, famous street

"Unterden Linden," Palace of Kaiser Wilhelm. Entertained by Berlin Pharmaceutical Society at their club building. Suburb of Potsdam; through the Palace of Frederick the Great.

Leipsic: Visited exposition, aerodrome field and drive through the city. Dresden: Visited Grüne Vaults of Royal Palace, wherein were contained precious gems, jewels and antiques handed down by kings and queens.

The art gallery, with over 1500 works of art, contained the priceless treasure, Raphael's "Madonna di San Sisto," within a sanctuary of its own. Vienna: Was received in person by the Burgomaster in the beautiful city. Visited University of Vienna, Museum of Natural History, Vienna Hospital, "Schönbrunn," the summer home of the Emperor. At the Palace of the Emperor we visited the Royal treasury vaults, containing jewels, crowns and coronation robes of kings and queens. Here were exhibited ancient religious relics of the Romano-Germanic times: a piece of wood and a nail from the cross of Christ, a remnant of cloth taken from the table-cloth used at the "Last Supper". Nurnberg:—St. Sebaldus' Church built between 1240-1477, Church of Our Lady, between 1355-1361, famous wall around the city preserved from olden time with its towers for protection of the city. Munich: "Nymphenburg," the Kaiser's summer palace and park; visited "Alte Pinakothek" containing paintings of old masters, Rembrandt, Van Dyke, Rubens and others; also "Glyptothek" which has a collection of classical sculpture. Lucerne: Alps and beautiful Lucerne. Strassburg —Capital of Alsace Lorraine; drive through old French part of city. Also visited large fort where our carriage was stopped by soldiers who searched us for fire-arms, my first war

BERLIN. OUR SPECIAL TRAIN.

VIENNA. HOLY GHOST DRUG STORE.

experience. Heidelburg: Aug. 1st, war declared against Russia. Reached Frankfort Aug. 3rd, where we were held for ten days during mobilization; were under restraint all the time. Aug. 3rd, I was awakened at one o'clock, by a bombardment of over twenty minutes; soldiers were firing on a French air-ship which was attempting to drop bombs on a station from which were to depart, that night, thirty-eight train-loads of troops. I was held under suspicion as a spy, but was released on showing my passport. Secret service men were at every hand. We had no direct casualties and on Aug. 13th we folded our tents, asserted our American independence and stole away, sailing nearly two hundred miles down the Rhine into Holland; crossed the English Channel to London and then, via Liverpool, home to our native soil. This was a trip never to be forgotten.

MAX MENZEL Minneapolis

Since returning to the United States the question has been asked me a number of times: "Are you disappointed in your trip?", referring, of course, to the disturbance and inconvenience caused travelers by the war. To all, I am ready to reply "No." Although I found it necessary to change my program a few times because of the war, I have seen enough to counterbalance any trouble, by witnessing the excitement incident to the soldiers going into the field, which will leave an everlasting impression on my mind.

Perhaps a short synopsis of my trip to Europe will best illustrate the pleasant times I had on the excursion.

July 2nd, the day of our departure across the Atlantic arrived, so we wend our way toward Hoboken, where the North German Lloyd S. S. Barbarossa is anchored, ready to take its load of human freight to the shores of our forefathers. Already most of the passengers are on the dock ready to embark. It is a motley crowd of American citizens, consisting of

about 400 souls, of which about 125 belong to the druggist's party, those who have joined the excursion fostered by the N. Y. Deutscher Apotheker Verein. All is hustle and bustle for about an hour, a farewell shake of the hands of the friends, who have come to see us off, when the band strikes up the national air, the gangways are drawn up, the anchor is raised and soon we are moving away from the dock on an eleven-day journey on the sea, leaving our cares behind. Gliding slowly down the New York harbor, we watch the unequalled line of skyscrapers and the statue of Liberty disappear in the distance, and then a feeling of loneliness creeps over us, which however is soon dispelled, for we look up our Minnesota delegation, consisting of Mr. and Mrs. Chas. Robinson, Mr. and Mrs. Truman Griffin and Prof. Gustav Bachman. Although the weather was fine and the water was smooth, the sea soon demanded its tribute, to which a number of the passengers were hastening to respond before evening. Even our Minnesota crowd did not fail to contribute their little mite.

July 4th, our national holiday, was duly observed by a march of the passengers around the decks, preceded by the band. Patriotic orations were then delivered in English and German.

In the evening a concert was given by the ship's orchestra, interspersed by readings and remarks.

A week passes. Fishing boats and steamers are getting numerous and sea-gulls are following in the wake of the ship, an indication that we are nearing land. Soon the first lighthouse comes into view and then the Scilly Islands. Although almost bare, they are welcome sight after the endless ocean of water.

Sunday, July 12th, about noon, we reached Boulogne-sur-mer, France, where the ship makes its first stop to unload 32 passengers. It seems like losing old friends, for we have become very well acquainted with some of them.

Another 24 hours and we catch the first glimpse of Germany, the mother-country, from which I parted 30 years ago, and to which, next to my adopted country, I owe so much.

After inspecting our baggage, we board a special train for Bremen, where we spend the balance of the day and the next, admiring the old buildings, so rich in history, built centuries ago. One of the most notable being the Cathedral, with its historic lead-cellar, erected in the 12th century.

Arriving in Berlin, during the afternoon of July 15th, the American druggists received a cordial reception by a delegation of Berlin druggists. Arrangements had been made to convey us to our hotels. The next day we were elaborately entertained by the German Druggists' Association. After a sight-seeing tour about the city, we were received at the Association building, where a speech of welcome was delivered by Dr. Salzman, the President of the association, which was responded to by Prof. Alpers of Cleveland, Ohio. We then inspected the manufacturing and wholesale establishment of the association, conducted along coöperative lines and an institution, the workings of which might well be copied in this country. After a sumptuous dinner, we were again taken in "autos" and driven to the Pharmaceutical Institute of the University of Berlin, where a lecture, given by Dr. Thoms, was the principal feature, and then guides took us through the large botanical gardens adjacent to the institute. To finish the day so full of instructive entertainment and enjoyment we were taken out to the beautiful lake "Wannsee". A boat ride around the lake dampened our appreciation of this somewhat, for a heavy rain came up during the trip, which drenched a number of the passengers who were on the edge of the boat. Landing at the "Swedish Pavilion," another feast awaited us, after which, to the music of a fine orchestra, some terpsichorean exercises were indulged in, lasting until the last train took us back to the city. The American druggists all agreed that the Berlin druggists are indeed royal entertainers, and the hope was expressed that an opportunity would be presented to show our appreciation by entertaining them on American soil.

After another day in Berlin, one day was spent in Leipzig and two days in Dresden. On the way from Dresden to Vienna, Austria, we passed through some of the prettiest sections of Germany, called the Switzerland of Saxony. An ever-changing panorama of natural beauty was presented to the eye and fields of various products were spread over the hillsides and valleys like checkerboards. The harvesting of grain, principally rye, of which there seemed a good crop, was in full swing, most all of the work being done by hand, the women working like men.

We arrived in the city of Vienna on the evening of July 21st, where we were officially received by the druggists of Vienna. We assembled at the University of Vienna, for which the distinction is claimed of being the oldest university in existence. At the Rathhaus we were received by the Vice-Burgomaster, and as a token of good will and of appreciation of our visit, he presented us with an album of the city. His speech of welcome was responded to by Prof. Alpers, who translated the message of the Burgomaster to the non-German-speaking members of our party. While in Vienna, a number of us visited the Imperial Military Direction, where most of the supplies for the Austrian army are prepared. There we witnessed the packing and cutting of cotton and gauze and the filling of ampoules by the vacuum system. We found this place a very busy one, for the war cloud was then already hanging over Austria. We visited a couple of well-appointed pharmacies and found that business is conducted there about as it is here. The patent medicine evil seems to have

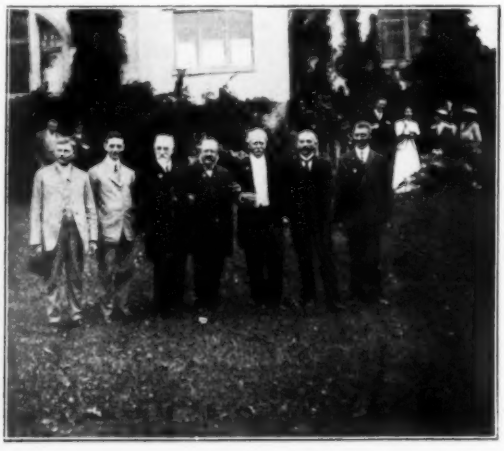
encroached upon the foreign market about as much as here. Found many of the old-time American nostrums on the shelves of the drug stores in Austria as well as in Germany. One thing that struck us odd was that every drug store is named after animals or other objects, the strangest one, perhaps, being the "Apotheke zum Heiligen Geiste." (Pharmacy of the Holy Ghost).

Leaving Vienna on the morning of July 24th we started for Nuremberg. One of the places pointed out to us on the way was the castle of the late crown-prince of Austria and his wife, whose untimely death is the cause of the present European war. They are interred there in a mausoleum, built under the direction of the crown-prince during his life.

No doubt, from an historic point of view, Nuremberg is the most interesting of the cities we visited. The old buildings and their quaint style, give the city an appearance so different from any place I know of. In feudal times this city was surrounded by strong city walls with moats between them. Much of these walls still remain in a fair state of preservation with many towers. Four main towers represented the four seasons of the year, twelve smaller ones to represent the twelve months of the year, 52 to represent the 52 weeks and 365 to represent each day in the year, with an additional one for the extra day in leap-year. However, I would not vouch for the correctness of this statement as the veracity of the sight-seeing guides is sometimes questionable.

Sunday, July 26th, we arrived in Munich, where great excitement prevailed on account of

MAX MENZEL, MINNESOTA.
"A Soldier of the Legion."



BERN. AT THE HOME OF DR. TSCHIRCH.

the declaration of war between Austria and Servia. Thousands of people were lined up in the square adjacent to our hotel, where the night before an altercation had arisen between a Servian restaurant-keeper and his guests, because he had refused to allow patriotic songs to be played by the orchestra. His guests, mostly students, became angry at his refusal and demolished the place. All of the fine marble tables, chandeliers and furnishings and every plate glass window, of which there were many, became a prey to the fury of the mob. It took a number of foot and mounted police to keep order about the place and open the way for street cars and vehicles to pass. July 28th found us on the way to beautiful Switzerland. Feasting our eyes on the wonderful scenery during this trip, we arrived in Lucerne about supper time. Unfortunately the next day was somewhat cloudy and unsuitable to get the full benefit of the scenery for which Switzerland is so justly famous. So while the greater number of our party decided to climb the noted "Rigi," with the expectation that the clouds would be lifted, a few of us decided to accept the hospitality of the celebrated botaniker and pharmaceutical instructor, Dr. Tschirch of Bern. Dr. Tschirch, who received us in person at the depot in Bern, at once conducted us to the Pharmaceutical Institute of the University, of which he is the dean. He showed us a great many things of interest, of which might be mentioned his pharmaceutical library, the second largest in existence, also a very unique collection of containers of crude drugs, perhaps the only collection of its kind in the world. A hurried inspection of the industrial exposition of Switzerland was then made, of which I want to say that although it was small, it was the best of its kind I have ever had the pleasure to see, showing the wonderful resources of this small republic. Not content with administering to our intellectual need, Dr. Tschirch and several of his able assistants did not neglect our physical wants, but took us to a very fine restaurant of the

exposition, where previous arrangements had been made for a sumptuous banquet. A drive about the city of Bern, surrounded by majestic snow-capped mountains, to the beautiful villa of the doctor, where another luncheon awaited us and a few hours of unrestrained enjoyment in the circle of his estimable family was spent, ended our visit, which will ever stand out in our remembrance as one of the most pleasant events of our European trip.

Regretting to leave this land of natural beauty we departed for the city of Strassburg, Germany, on the morning of July 30th, arriving there after a five hour ride. The time to look over this city was very limited, for we left again the next day for the University city of Heidelberg. A guide conducted us through this famous place of learning, where the traditional student life with its duels and drinking fests are still carried on as of yore. One of the features for the tourists to see, is the "Carcer" or prison of this institution. It seems to be the ambition of the students to bear the distinction of having been incarcerated there, and they will sometimes go to extreme lengths to realize their desire. A visit to the ruins of the old castle Heidelberg, is worthy of mention. One of the features to be seen there is a colossal wine barrel, holding 49000 gallons. During its existence it has been filled three times the last time in the 18th century.

August 2nd, the first day of the mobilization of troops for the war, finds us in Darmstadt, the home of the world renowned house of Merck. Entertainment was to have been provided there for us, with a visit to their factory of chemicals, but the war is about to begin and time is too valuable to stop for the entertainment of guests. Great excitement prevails, caused by the gathering of troops of cavalry and artillery. Big auto-trucks are busy all over the city, picking up supplies and hundreds of "autos" and trucks are gathered together on a vacant square ready to be rushed to the front. Sight-seeing is a thing of the past, for our crowd is about to break up. We are told that our special train will not take us any farther and that everybody must look out for themselves, to get to the next place on our list. The exodus of people has commenced and various trains, crowded to the utmost, land our party at Frankfort. Informed that the railways will take passengers only two days longer, that thereafter every train is to be used for the movement of troops only, we lose about half of our crowd, who rush to various ports to get transportation to our peaceful country. The balance stayed at a very good hotel, where arrangements had been made for our care, until the excitement incident to the first days of the war and the movement of troops was over, and arrangements had been made for the return to our beloved U. S.

C. A. ROBINSON Minneapolis.

We sailed on a German boat, the Barbarossa, leaving New York July 2, under the auspices of the German Apothecaries' Association of New York. Ten days' time was consumed in the passage from America to Germany. On the 13th of July, we arrived at the city of Bremen, a beautiful place of well-kept homes, public buildings and residences. I must certainly give the German nation credit for the great care they take and the immense amount of work they must do in keeping their cities, villages, and the entire country in a clean, wholesome and well-kept condition. Members of our party were much interested in one sort of business that I for one did not know existed in that country and that was known as a droguerie; that is, a store where supplies are sold and dispensed outside of the prescription business or what would be known as a dispensary. These stores sell patent medicines, proprietary articles, fancy and toilet goods but do no dispensing or prescription work whatever. Our method of travel was by a small special train of six cars or coaches. We were under the direction of a conductor who in turn was guided by the company in whose care we were, and from whom we purchased our steamship, hotel, railroad, transportation, "bus" and baggage tickets. The time consumed in traveling between Bremen and Berlin was far from being tiresome or uninteresting as we passed through many small cities, towns and a beautiful country. The latter resembles our western territory with the exception, of course, that it is under a high state of cultivation and well populated. There are very few large farms, nearly all being, as near as we could judge, from five to forty acres in extent. The principal crops are rye, wheat, oats, sugar-beets, poppy seed. Very seldom would we see a field of what we call Indian corn. Arriving at Berlin, we were met by the professors, instructors, and members of the college of pharmacy and conducted to our hotels. Berlin is a beautiful city and as you know the largest in Germany, with clean, well paved, wide streets, beautiful parks, and even the congested part of the city as wholesome and clean as the outlying districts. The medium and high-class hotels are a great credit to the city, everything about these places showing great care as to general cleanliness. There are no back-alleys, for tin cans, rubbish or garbage. The courts of these hotels, usually filled with unsightly objects in our country, are perhaps the cleanest and best kept parts, where white cloth-covered tables and chairs, graveled walks and overhanging trees and palms enable one to enjoy a meal in a very pleasing and satisfactory manner. The story would be too long to tell you of the many receptions and entertainments afforded our party in the city of Berlin, all carried out in a business-like manner by the members of the colleges and places of learning who received our party.

Of course, the entire trip gave us only a bird's-eye view of these cities and the country, and yet to tell you every point of interest visited and every entertainment afforded us would take

too much time. While in Berlin, our association and party was given a reception by the American Ambassador, and his wife, Mr. and Mrs. Girard. Several of our party were somewhat startled at receiving this invitation, thinking that perhaps they would be called upon to wear dress-suits, but Mr. Girard at once eased our minds, by saying that it would be strictly informal, and, when we arrived at his house, we found that this democratic gentleman had kept his word and he appeared in his business suit, not at all more showy than any member of our party. He and his wife mingled with the company, expressing themselves as pleased indeed to see friends from America.

Our next stop was at Leipzig, certainly an interesting city, where we were very much interested in seeing the general conditions existing and the manner of living in this old German town. From Leipzig we went to Dresden, another beautiful, well kept, small city where we visited numerous old churches and enjoyed trolley and automobile trips about the city and surrounding country. From Dresden we proceeded to Vienna, the capital of Austria and here we were again received by those interested in pharmacy and they seemed untiring in their efforts to see that our party of Americans were well taken care of. Interesting visits were made to the hospitals and places of learning, and to the many beautiful parks and museums. I believe our most interesting ride was from Vienna to Nuremberg, and hardly a moment passed but what exclamations of surprise were heard as we passed through the beautiful country and along the valley of the river Danube. Fruits were being gathered, the harvest was just commencing and as our train passed through the country, we saw the methods of harvesting and general farming carried out in Europe. Very little machinery was seen. Occasionally, one of the old time reapers was observed. Most of the grain is cut with what we would call a cradle, not the heavy sort used in America but a light three-pronged affair, the grain, of course being laid on the ground and bound later. Hundreds of smaller fields were cut in the manner of Bible times by grasping a handful of grain and then cutting with the old fashioned grass sickle. A great deal of this, of course, was done by women. The farmers do not have their little homes located on each separate farm or tract of land but build them in little villages from two to three miles apart. Occasionally, where there was a large population, a small church spire would be noticed. Nearly all railroad crossings are either over or under the tracks; there are very few grade crossings, but where there are an attendant is at hand and gates are raised and lowered. As far as the eye could reach, these small farms could be seen stretching away over the rolling country all in the highest state of cultivation. In passing through wooded sections, no rough territory would be seen; that is, every log, branch, or twig had been cut and preserved in the homes of the villagers, piled up and covered, so that all could be made use of in winter. A certain wild flower or weed that is troublesome in that country, is a wild poppy, a very pretty blossom and was really ornamental. At nearly all of the larger stations that we passed through our train would stop long enough for the members of our party to disembark and obtain light lunches, such as sandwiches and the liquid refreshments which Germany is so famous for: beer, Rhine and Mosel wine. Nuremberg is the center of the German toy industry. From this point we went to Munich and in describing a trip in Germany, our strictly temperance hearers must bear with us if we mention the all important industry of this city, as it is known as the beer center of Germany. Beer, however, in Germany must not be compared with the product of this country, as you all know that the amount of alcohol in beer in Germany has been considerably reduced, as we understand the Kaiser realized the vast amount consumed and that perhaps it would be better for his people that this step be taken. At this city, the first, (or at any rate the first we saw) marked indications of war presented themselves and on the morning of our arrival we saw large plate glass windows in the retail stores that had just been broken by the mobs in their endeavors to capture Russian spies. Nearly all night long, great crowds paraded the streets singing German songs and cheering for their country. We went to Lucern, Switzerland, next, a beautiful country of snow-capped mountains, fertile valleys and pretty towns.

An invitation was received at Lucern on our arrival extending an invitation for those of our party who were interested to visit the capital, Bern, about fifty miles from Lucern. Here is located the pharmacy college under the direction of Professor Tschirch. Nothing was left undone to make it very pleasant for about 15 members of our party who decided to make the trip to Bern. Strassburg, located near the French border, was our next viewpoint, equally as interesting as the other cities we had visited and noted for its beautiful churches, statuary, and interesting scenery. Heidelberg, next on our list, was interesting on account of its University and the great number of students, its old historic castle, which brings many visitors to the city. At this city we were astonished to see such strong manifestations of war, troops marching, cavalry mobilizing, cannons and horses being transported and every day appeared stronger manifestations of war. In fact at this point some of our party, who were perhaps a little too free with their cameras, were arrested, in view of the fact that war had been declared at this time, but they were quickly released when it was known that they were Americans and members of our party. On our arrival at Darmstadt where the firm of Merck & Co. is located, a reception committee from this company met us on our arrival, and informed us that if it was our intention to endeavor to proceed to France, they greatly feared that we would never reach that country and would not have an opportunity of seeing the city of Paris and I regret to say that this proved true. These representatives of Merck & Co.

informed us that over five thousand men had been taken out of their laboratory and were already in uniform prepared for war. Darmstadt is a mobilizing point, barracks being located there, and all day Sunday, the day of our visit, soldiers of all ages, from seventeen to fifty years, were parading the streets in their new uniforms. All day, trains were arriving bringing, from the surrounding country, men and boys, in their citizen's clothes, with their little parcels of personal belongings, to the barracks that they might receive their uniforms and equipments. We left Monday morning going directly to Frankfort, but were destined to be disappointed regarding the balance of our trip, for while we were enjoying our luncheon, the conductor of our party informed us that the last regular train would leave Frankfort at 3 o'clock that afternoon. After that hour, all the trains would be taken over by the war officials for moving their troops to the front. A hurried consultation was held and about thirty-five of our party decided to take this train and go hurriedly across the country to Cologne on the Rhine River, crossing that river at Coblenz, where the famous Appollinaris Springs are located. The ride along the Rhine afforded us many beautiful sights.

We arrived at Cologne about 10 o'clock at night but were not allowed to get out of our coach. We were ordered to keep all lights burning and windows closed. The railway officials informed us that while it was known that we were an American party, the German army officials did not know who might be with us, as spies who might drop messages from the windows. From this point our route was almost due west through a small part of Germany and across Holland to the town of Flushing, on the Holland coast, where we arrived the next morning at about 9 o'clock. At this point we embarked on a Holland boat to cross the English Channel.

We arrived at the town of Queensboro about 6 o'clock in the evening, after having been stopped a number of times by British cruisers who sent officers on board our boat to investigate as to what passengers were carried. Our party arrived at the city of London about 9 o'clock in the evening, and experienced some difficulty in securing hotel-quarters, owing to the general rush to London from the continent by American tourists. Our stay in London was quite pleasant for about ten days, and we were enabled to visit many interesting points in the city and surrounding country. At the end of this time our party gradually broke up, different ones leaving London on the many steamship lines, especially British and American, that would take them back to good old America.

At this writing even, Oct. 20th, not all of our party have reported as having returned, as all did not take advantage of the last train as we did in getting out of Germany, but trusted that opportunities would present themselves, to enable them to eventually leave the country safely.

The statue of Liberty certainly did look as good to the many returning tourists, we feel sure, as it did to the writer. We are now very glad that we went and are equally pleased and satisfied to get back.

MEDIEVAL EXECUTION TOWER, NUREMBERG

Proceedings of the Local Branches

CHICAGO.

The November meeting of the Chicago Branch of the American Pharmaceutical Association was held at the School of Pharmacy Building, Tuesday evening, the 17th.

President James H. Wells presided and introduced Mr. Fred A. Miller, Botanist of Eli Lilly & Co., Indianapolis, who addressed the meeting on the subject, "The Cultivation of Medicinal Plants." His address was illustrated with many lantern slides, showing the detailed processes for the practical cultivation of various drug plants, including those yielding Belladonna, Digitalis, Stramonium, Althæa, Larkspur, Cannabis and Conium.

The address was very enthusiastically received by the audience of more than one hundred who voted it not only interesting but very instructive. A number of druggists outside of Chicago were present, including Mr. J C. Wheatcroft, of Grayville, W. C. Irwin, of Salem, P. L. Gain, of East St. Louis, and Professors G. D. Timmons and E. H. Wisner, of Valparaiso, Indiana.

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CINCINNATI.

The regular monthly meeting of the Cincinnati Branch, A. Ph. A., was held at the Cincinnati College of Pharmacy on Tuesday evening, November 10th.

President E. H. Thiesing directed a short business session, during which the minutes of the previous meeting, as read by the Secretary, were approved.

The President then introduced Mr. D. E. Murphy, who presented a very efficient paper, entitled: "The Folly of Not Filling the Demand." He aimed to show that, by the antagonism manifested by the druggist toward the products of the manufacturing pharmacists, who spend large amounts of money, special thought and energy to create a market for them; that the druggist has himself to blame for the coining of such words as "Substitutor" or "Substitution," and not alone that, but he has created an impression upon the public mind, of hesitancy and suspicion, not alone against medicinal products in general, but against the druggist himself.

The paper is full of meat and it led to a discussion, in which Mr. Freericks, Mr. Greyer, and others took part, and there is no doubt, that this subject will be taken up again for discussion at future meetings. Mr. Murphy was tendered a vote of thanks, after which President Thiesing introduced Prof Chas. T. P. Fennel, who chose for his subject: "The Early History of Chemistry." The lecture was profusely illustrated with pictures showing the earliest evolution of mankind, laying particular stress upon the ever recurring presence of Fire, which always attended the first development of man, the first workings of the precious metals, the first application of distillation, and always, the sacrifices of the people's offerings to their gods. The lecturer took his audience from the earliest pre-historic times to the Phœnician, Egyptian and Arabian periods; to the recognition of Fire, Water and Air as elementary bodies; through the field of alchemy up to the more modern development of chemistry. A very pleasing feature was the exhibition of books and manuscripts, some more than 300 years old and bearing the individual writings and signatures of such men as Scheele, Priestley, Lavoissier, Gay-Lussac, and others.

Professor Fennel was given a rising-vote of thanks. The meeting was well attended by members and their friends; the student body of the Cincinnati College of Pharmacy, as well as a number of the faculty and students of the Cincinnati Eclectic Medical College being present.

All voted to have spent an enjoyable and instructive evening.

CHARLES A. APMEYER, Secretary.

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NASHVILLE.

The Branch held its regular meeting at Bloomstein's Hall on Church street, Thursday evening, November 19th, with President J. O. Burge in the Chair. Dr. E. A. Ruddiman made a full report of the Detroit meeting of the A. Ph. A., stating that it was the best meeting he had ever attended.

Mr. C. S. Martin, Ex-President of the National Wholesale Druggists' Association, by invitation, addressed the Branch on the subject of "The Effect of Recent National Legislation on the Drug Business." He gave a short history of the enactment of the war stamp tax bill by Congress and congratulated

the druggists of the country on their united efforts in defeating the tax on proprietaries. The Senate, he said, were very insistent on the provision and only receded, after they had been flooded with an avalanche of protests from all over the United States.

He explained the section of the law imposing a tax on toilet articles and cosmetics. Most retail druggists, he said, are manufacturers of some toilet preparation, and he urged them to be ready to comply with the law when it becomes operative December 1st. He reminded them of the tax on cigars and tobacco stands, doing a business over $200 a year. Also of the tax to be levied on telephone messages over 15 cents, and on telegrams, promissory notes, contracts, deeds, insurance policies, bills of lading, express receipts, etc. He urged them to study the Clayton bill, especially the provision relating to exclusive agencies.

Dr. E. A. Ruddiman and J. B. Sands were appointed as a nominating committee to select the names of candidates for the various offices of the Branch to be voted on by mail. The Branch decided to meet at Bloomstein's Hall on the third Wednesday of each month at 3 p. m. Refreshments were then served.

W. R. WHITE, Secretary.

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NEW YORK.

The October Meeting of the New York Branch of the American Pharmaceutical Association was held on the evening of the 19th. Dr. H. V. Arny was in the chair.

The minutes of the previous meeting were dispensed with.

Dr. Joseph Weinstein's report showed the Treasury to be in a healthy condition.

T. D. McIlhenie reported progress for Council of the parent association.

Louis Berger, Chairman of the Committee on Fraternal Relations, had no special report to make but referred to the work done during last spring and stated that matters generally were progressing satisfactorily.

R. P. Fischelis was elected to membership and at that time the Secretary called attention to the fact that 36 new members had been added to the roll in the past nine months.

Dr. G. C. Diekman reported on the Progress of Pharmacy, covering the determination of Camphor in ointments, the assays of certain volatile oils and Cinchona, Weinberger's Whooping Cough Mixture, the decomposition of Linseed Oil by microorganisms, and the estimation of free Sulphuric Acid in Copper Sulphate. The report was discussed by Messrs. McIlhenie, Raubenheimer and Arny.

Dr. William C. Anderson, Chairman of the Committee on Legislation, discussed the present status of the Harrison Bill, called attention to the Stevens Bill, the Stamp Tax, and also stated that Attorney-General Parsons of the State of New York had rendered an opinion that the amended section 182 of the Sanitary Code of the City of New York was in conflict with the Boylan State Law. He stated that the Boylan Law was working out satisfactorily. The report was discussed by Messrs. Murray, Raubenheimer, Fried and Weinstein.

The speakers of the evening were Messrs. Caswell A. Mayo, William C. Anderson, William Mansfield and Jeannot Hostmann. They reported on the association meetings of the past summer.

Caswell A. Mayo, President of the parent association, reported on the recent meeting of the A. Ph. A. and strongly urged all members to make it a practice to attend the yearly meetings. He pointed out that, aside from the valuable information and benefit gained by hearing the opinions of the members of the profession, friendships were made which continued throughout life. He stated that each year the meeting was conducted in a more businesslike manner. He praised the local committee whose work was efficient. Mr. Mayo stated that the papers presented before the Scientific Section were not of transcending importance this year. He has recommended to Dr. Herman Engelhardt, the newly-elected Chairman of the Scientific Section, that the work and study for this year should be concentrated on specific subjects. He recommended that all members of the association should feel that they are on the membership committee and laid stress upon the desirability of increasing the membership of the A. Ph. A.

Mr. Mayo stated that the meetings of the Section on Commercial Pharmacy were very interesting and well attended.

Dr. Weinstein's request for a report on the Diastase Club met with applause, as did also the report, which was interesting and amusing.

Dr. William C. Anderson made the report

on the Philadelphia Meeting of the N. A. R. D., calling attention to the price protection work being done. He stated that the membership had been increased and that the treasury had a good balance on hand.

Extensive reports were made by the Legislation Committee, as well as the Committees on Pharmacy Laws, Telephone, and Propaganda.

The discussions were interesting, stated the speaker, and the entertainment was characteristic of hospitable Philadelphia.

Dr. Anderson dwelt upon the importance of the vast amount of work being done by the Legislation Committee, and stated that all retail druggists should join the N. A. R. D. and support them in the good work they are doing.

Dr. William Mansfield reported that the New York Pharmaceutical Association Meeting was fairly well attended.

The real interest was the President's address in which important recommendations were made.

An unprecedented increase in membership was made during the year due to the efforts of Messrs. Riefflin and Smith.

Dr. Mansfield called attention to the scarcity of scientific papers.

Dr. Jeannot Hostmann followed with an interesting account of the New Jersey Pharmaceutical Association Meeting held at Lake Hopatcong. He indicated that about 260 were present and stated that President Holzhauer's annual report dealt largely with legislative matters. He stated that the association had a membership of about 850. Some twenty papers were read and all, with the exception of two or three, were written by retail druggists. It was the speaker's opinion that Raubenheimer's paper on "Don'ts in Pharmacy,' and Gallagher's paper on "Poison Laws" were of particular interest. He also stated that the entertainment given by the Commercial Travellers was unusually good. The reports were discussed and commented upon by Messrs. Raubenheimer, Diner, Arny and Roemer.

The meeting then adjourned.

FRANK L. MCCARTNEY, Secretary.

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PHILADELPHIA.

The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held on Tuesday evening, November 10, at the Philadelphia College of Pharmacy. President E. Fullerton Cook presided. The minutes of the last meeting were read and approved.

The committee, appointed at the October meeting to audit the treasurer's accounts, reported them to be correct.

Under the heading of "new business," Prof. C. H. Lawall introduced a resolution protesting against the opinion of the Chief of the Bureau of Chemistry of the Department of Agriculture, in which he states that the word "dram" unqualified, means 1/16 of an avoirdupois ounce. The resolution was passed and copies were ordered to be sent to the Chief of the Bureau of Chemistry of the Department of Agriculture and to the various pharmaceutical journals for publication. The full text of the resolution is as follows:

"The Philadelphia Branch of the American Pharmaceutical Association do hereby

Resolve: That we emphatically disagree with the opinion of the Chief of the Bureau of Chemistry of the United States Department of Agriculture as expressed in General Information Opinion No. 66, issued July, 1914, in which he states that the word "Dram" unqualified, means 1/16 of an avoirdupois ounce.

This is contrary to all pharmaceutical teaching and usage, and as the use of the word would largely be applied to medicinal products the impression created by the use, thus authorized, of the word would be misleading and might lead to serious results. The word dram, unqualified, should be held to mean 1/8 of an apothecaries (or Troy) ounce, which is 60 grains."

Professor Lawall also introduced a resolution protesting to the editors and publishers of Pearson's Magazine, against the publication of the article "Pills and Piracy," by Sloane Gordon, in the November issue of that magazine. The resolution was passed and copies ordered sent to the editor of Pearson's Magazine and to the various pharmaceutical journals for publication. The full text of the resolution is as follows:—

"The Philadelphia Branch of the American Pharmaceutical Association do hereby

Resolve: That we protest most energetically to the Editors and Publishers of Pearson's Magazine against the publication of the article "Pills and Piracy" by Sloane Gordon, in the November issue of the Magazine and condemn it as unfair and misleading in that it takes no cognizance of the care and skill exercised and the high educational attainments required to conscientiously practice pharmacy and avoid errors in the preparation and dispensing of physicians' prescriptions. If the underlying principle upon which

the author's article is based be admitted then barbers would only charge for the soap used in a shave and authors would only be permitted to charge for their paper and ink.

We not only ask that such articles be refused in the future but that some editorial expression of error or regret at the publication of the article in question be made in one of the issues of the near future and that this resolution be sent to the Editor of Pearson's Magazine and to the various Pharmaceutical Journals for publication."

The programme of the evening was then taken up and Dr. C. E. deM. Sajous read a paper dealing with "The Use and Therapeutic Value of the Popular Animal Glands."

Dr. William Jay Schieffelin, of New York, read a paper discussing, "The Use of Standardized Radium Emanations in Medical Practice."

The papers were interestingly discussed by Messrs. W. L. Cliffe, F. E. Stewart and H. C. Wood.

Mr. Franklin M. Apple was unable to present "The Review of Current Pharmaceutical Literature," being called out of town by the illness of his father. (Mr. Apple's paper appears in this issue.)

A vote of thanks as proposed by Prof. F. P. Stroup, was given to the contributors of the programme after which the meeting adjourned.

J. ED. BREWER, Secretary.

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WASHINGTON.

The November meeting of the City of Washington Branch of the American Pharmaceutical Association was held on the 18th instant, at the National College of Pharmacy.

After disposing of the routine business and the selection of Messrs. Lewis Flemer, Martin I. Wilbert, and H. C. Butler, as a nominating committee to report at the December meeting, nominations for officers, Mr. W S. Richardson introduced Dr. Wm. J. Schieffelin, of New York, the principal speaker of the evening, who gave a most interesting and instructive lecture on the physics and chemistry of Radium. A number of instruments used in the estimation of various forces which Radium exerts, were presented and their application fully explained. Dr. Schieffelin volunteered to answer questions on the matter of Radium and was kept long in the evening answering the queries of the members and their guests.

The meeting was the best attended since the organization of the City of Washington Branch.

The program for December, in addition to the election of officers, includes two papers, "Poison Plants of Stock Ranches," by Dr. C. D. Marsh, postponed from the November meeting, and "Chenopodium, or American Wormseed," by Dr. William Salant.

HENRY B. FLOYD, Secretary.

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SAINT LOUIS.

The twenty-eighth meeting was held in the Saint Louis College of Pharmacy, Friday evening, November 27, 1914. After the disposal of the routine business, President Buehler announced his appointments on the Committee on Membership—Dr. Charles E. Caspari, William F. Kahre, Victor H. Krummenacher; Committee on Program—Leo R. Suppan, Louis Lieberstein, E. A. Sennewald; Committee on Legislation—Julius C. Hoester, Francis Hemm, J.P. Schoenthaler; Memorial Committee—William Gunn, Gustav Kring, Otto N. Speckart; Honorary Members on the Advisory Board—William Mittelbach, Ambrose Mueller, Adolph Brandenberger.

The Secretary then read a letter from Prof. Charles H. Rogers, Morgantown, West Virginia, in which he complimented the Branch upon the work it has accomplished. The Chair called upon Dr. Whelpley, who detailed the work that Mr. Rogers is doing for the upbuilding of pharmacy and of his efforts in promoting the West Virginia Branch.

Mr. Buehler read a paper on "Restrictions in the Distribution of Poisons." The paper, "The Sale of Poisons," as contributed by Mr. Mittelbach, Booneville, Mo., was read. Both papers were discussed from many viewpoints by Messrs. E. H. Wolff, Charles Gietner, Dr. Rehfeld, J. P. Schoenthaler, Paul Goodale, Prof. J. M. Good, Dr. Whelpley, M. J. Noll, Dr. O. F. Claus, Frederick Wolff, C. H. Bierman, Julius C. Hoester, Dr. O. A. Wall, Sr., and J. W. Mackelden.

The Chair stated that nominations were in order for a delegate in the Council of the parent body to succeed Mr. Ilhardt, whose time had expired. Mr. Jerome A. Wilkerson was elected unanimously to represent the Branch for three years.

The Chair stated that the next meeting will be held, December 18, at 8:30 p. m.

JULIUS C. HOESTER, Secretary.

College and Society

ILLINOIS PHARMACEUTICAL ASSOCIATION.

The semi-annual meeting of the Executive Committee of the Illinois Pharmaceutical Association was held at the office of the Secretary in Chicago on Tuesday, November 17, 1914.

The morning session was called to order at 10 o'clock and it was decided to hold the next convention at Centralia, June 15, 16 and 17, 1915.

The treasurer's report was read and showed that the expenses since the annual meeting were $537.98, the receipts $400.00 and the balance on hand in the general fund $1122.65 and in the permanent fund $600.00. Appropriations for the various standing committees were granted as follows: Legislative Committee, $600.00; Propaganda Committee, $100.00; Trade Interest Committee, $25.00; School of Pharmacy Committee, $25.00.

It was voted to charge a registration fee of one dollar for each person for registration at the annual convention.

A committee consisting of Messrs. W. C. Irwin, R. E. Dorland and I. M. Light were appointed to coöperate with the Illinois Pharmaceutical Travelers' Association in making arrangements for the Centralia meeting. Upon motion, Mr. Henry Schaper, President of the Chicago Drug Club, was added to this committee.

Upon motion the Secretary was instructed to write to the Postmaster General in regard to a ruling concerning the mailing of poisons, especially when these are physicians' prescriptions.

Nominations for the voting cards were made as follows:

Board of Pharmacy—W. W. Klore, O. U. Sisson, D. P. Seibert, C. M. Friesenecker, John Chwatal, L. P. Larsen, Geo. Moyen, Henry Eckart, C. A. Storer, Frank Ahlborn, ... F. Schultz, J. T. Murray, R. H. Slade, Aug. Sundine, Geo. G. Johnson, John Harsch, Chas. Frison, F. E. Blake, E. P. Hilligoss, Byron Armstrong, R. E. Dorland, P. L. Gain, Fred Pfaff, T. D. Gregg and H. C. Schuh.

Advisory Board—O. P. Stephan, C. F. Moritz, J. T. Lueder, F. M. Mares, Chas. Foucek, A. E. Letzler, George J. Guerten, John Lambrecht, Otto Mentz, C. H. Burkett, L. C. Staudt, W. B. Hattenhauer, Chas. Gustafson, F. G. D. Walker, W. S. Clintock, W V. Dufner, S. D. Van Deventer, H. B. Rowe, S. M. Riggs, J. W. Doyle, E. A. Sells, P. H. Paul, F. J. Nirider, Royal Davenport and F H. Kroh.

Several letters from members of the Committee who were unable to be present were read and correspondence with several other Associations was presented by the Secretary, who likewise made a report of his efforts in behalf of the Stevens Bill. None of these matters required action. The meeting adjourned late in the afternoon after an invitation had been received from the Chicago Branch of the A. Ph. A. to attend its meeting held the same evening.

W. B. DAY, Secretary.

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THE COLLEGE OF PHARMACY OF THE STATE UNIVERSITY OF IOWA.

The Junior class has elected the following officers: President, R. E. Everly, Canton, Ill.; Vice President, J. C. Lick, Dubuque, Ia.; Secretary-Treasurer, Lucile S. Shirchiff, Solon, Ia.; Yell Leader, W. R. Jennings, Red Oak, Ia.

The first annual conference of the College of Pharmacy was held at the Pharmacy building Friday afternoon, October 23. The conference was opened by Dean Teeters, who extended a welcome to the visiting alumni. The first paper, "Price Cutting and Its Demoralizing Effects," was by H. H. Springer, who emphasized the point that price cutting does not inspire confidence or help to establish a reputation for business integrity. The "Medicine Wagon" was the subject of a talk by Prof. R. A. Kuever. Prof. Kuever reviewed some papers published recently in a drug journal. His discussion brought out the fact that the use of patent medicines is on the decline and that no druggist should encourage their sale, particularly by sending wagons into rural communities, when he knows that self-medication is dangerous. Such a business is unprofessional and unscientific and especially to be discouraged

when ethical pharmacy offers a field broad enough for all and remunerative as well.

Following is the program in full:

"Why Experience Counts," O. L. Moffett.
"Price Cutting and Its Demoralizing Effects," H. H. Springer.
"Salesmanship," E. M. Wertz.
"Drug Sundries," M. B. Herrald.
"The Peddler's Wagon," Prof. R. A. Kuever.

The papers were discussed by J. M. Canty, H. E. Weld, W. E. Palmer, G. E. Mace. Arrangements were made to hold a conference each year at "Homecoming," and a committee will be appointed by the president to arrange a program. The following officers were elected: President, H. H. Springer; Vice President, H. H. Gibbs; Secretary-Treasurer, H. M. Doden.

Phi Delta Chi held the first initiation of the year at the College on the evening of October 23. The initiates were W. R. Jennings, C. A. Pates and R. S. Potter.

Mortar and Pestle began their programs for the year on the 20th of October. Professor Bohumil Shimek gave a most interesting talk about his experiences in Europe during the past summer, dwelling especially upon the conditions of life among the common people. He also told some very interesting things which show the contrast between systems of education in universities there and in America. The second meeting was held November 3. G. J. Zopf talked on "What Constitutes an Efficient Drug Clerk."

Phi Delta Chi celebrated Founder's Day, November 2, with a banquet at the Hotel Jefferson. Dr. C. S. Chase acted as Master of Ceremonies, and the following after-dinner program was carried out:

"The Pharmacy College and Phi Delta Chi,"—Dean W. J. Teeters.
"Our Grand Council"—A. B. Wagoner.
"Fraternity,"—Professor R. B. Davis.
"The History of Phi Delta Chi"—Professor R. A. Kuever.
"E. Pluribus Unum"—Dr. W. J. Karslake.
"The View Point of the Pledge"—W. R. Jennings.
"The Fraternity House"—L. K. Fenlon.

This was the thirty-first anniversary of the founding of Phi Delta Chi fraternity at the University of Michigan. The chapter at the University of Iowa, known as Nu Chapter, is in good condition and their records of scholarship are of the highest order.

Of General Interest

COMPLIMENTARY DINNER.

The Northern Ohio Branch of the American Pharmaceutical Association and the Trustees and members of the Cleveland School of Pharmacy entertained Dr. W. C. Alpers at dinner on Wednesday evening, December 2, at the Cleveland Athletic Club, the occasion being in honor of the election of Dr. Alpers as President of the American Pharmaceutical Association.

The banquet was attended by all of those prominent in the profession in Cleveland, and was a most interesting and enjoyable function, a well-bestowed honor to the next President of our Association.

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"The result of the balloting for officers in the American Pharmaceutical Association is of unusual interest and especially gratifying to Clevelanders, inasmuch as Dr. Wm. C. Alpers of this city was elected President of the Association, and Dr. H. V. Arny, formerly of this city, was made a member of the Council. Quite apart from any justifiable local pride we feel that the A. Ph. A. is to be congratulated in securing the services of these two men in an executive capacity. That they have commanding ability, wide experience and erudition goes without saying, no man is called to leadership in the A. Ph. A. who has not these. But beyond that both have an intimate and first-hand acquaintance with the rank and file of the drug trade, and this is fortunate. The A. Ph. A. is unquestionably the oldest and most representative pharmaceutical association in America, but there is extant a very definite and widespread though ill-founded notion that the A. Ph. A. is a "high brow" organization. That its members and leaders are pharmaceutic "blue stockings," so to speak, men who have not had the experiences of the average druggist and therefore can not be in sympathy with him. Wherever this notion has prevailed it has invariably produced a feeling of indifference, if not indeed hostility, towards the association on the part of the retail druggist and his clerks, and the election to executive positions of men like Alpers

and Army will do much to dispel it. And this, we repeat, is fortunate. The average druggist needs the A. Ph. A. and what it stands for quite as much as he needs anything; and the A. Ph. A. in turn can not afford to get too far away from him, lest it lose "the common touch" and so fall short of what it aims to be, "the clearing house of American pharmacy."—*Association News, Northern Ohio Druggists Assn.*

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EXECUTIVE BOARD OF THE A. D. F. I. CO.

The third quarterly meeting of the A. D. F. I. Co. was held in Cincinnati on Friday and Saturday, November 20th and 21st Messrs. Chas. H. Avery, L. G. Heinritz, Jas. H. Beal, Geo. B. Kauffman, Walter Rothwell, A. O. Zwick, and Frank H. Freericks were in attendance. Preliminary arrangements were made for the directors and stockholders meeting, which takes place on the 9th and 10th days of February. Many important matters found consideration on the part of the Committee, inclusive of entering some additional states for business.

The first nine months of the year have shown a splendid growth in the business of the company, and it seems now that from every viewpoint the year will end as the most successful one in its history.

During the first nine months of this year, the company saved its policyholders $37,341.88 in premiums, this amount being retained by the policyholders, and such savings will be in excess of $50,000.00 for the year.

For the first nine months of the year the company wrote insurance amounting to $10,941,121.70 at a premium of $112,025.64, which is an increase over the corresponding period of the preceding year amounting to $1,681,886.37 at a premium of $17,094.13. On October 1st the company had in force business amounting to $13,919,115.70 at a premium of $144,135.38. So far this year the fire loss has amounted to $31,935.41. The expense of conducting business for the first nine months amounted to $34,843.14. Business re-insured for the first nine months was at a premium of $13,890.88. The Re-Insurance Reserve of the company was increased to $63,632.24. The total assets on October 1st amounted to $370,304.55, and the total liabilities, other than re-insurance reserve, amounted to $5,823.85.

DR. F. B. POWER.

Dr. Frederick B. Power announces his retirement from his position as Director of the Chemical Research Laboratory of the Burroughs, Wellcome Company of London, Eng., and his return to this country, where his address will be 535 Warren St., Hudson, N. Y. He will be succeeded in his former position by Dr. Frank L. Pyman. Dr. Power has occupied the position he vacates for eighteen years, and during that time he has contributed many papers of great interest and benefit to the profession.

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MODEL PHARMACY LAW.

The Section on Education and Legislation of the American Pharmaceutical Association is at work on a difficult and important task—that of drafting a Model Pharmacy Law. Each state pharmaceutical association and each state pharmacy examining board has been asked by the chairman of the Section to appoint one man who is particularly interested in present pharmacy laws to coöperate in this work, thus making a sub-committee of two in each state.

It will be the work of each sub-committee to go over their present pharmacy law, indicate changes which they deem necessary and make suggestions for additional provisions. These suggestions will be sent to the Chairman of the Section on Education and Legislation, and from the material thus gathered the members of the Section will make the first draft of a uniform Model Pharmacy Law.

This first rough draft will then be submitted to the members of the various sub-committees for such changes as they may deem necessary to suggest. Important differences of opinion on any one or all provisions will be submitted to the vote of the members of the various sub-committees by mail, together with arguments pro and con, and the decision of a majority is tentatively to control.

The tentative draft thus agreed upon will be submitted by the sub-committees of each respective state to its next meeting of the state pharmaceutical association, for discussion, approval or disapproval, either in whole or in part. The decision of each respective state association will then serve as a guide to their sub-committee in their final portion of the drafting.

These various sub-committees together in one body will be known as the Voluntary

Conference of the Section on Education and Legislation—each man having signified his willingness to serve and his interest in the work.

This Voluntary Conference will assemble in meeting under the auspices of the Section on Education and Legislation at the next annual meeting of the American Pharmaceutical Association where the final draft of the Model Pharmacy Law will be agreed upon.

Carrying on the work in this manner it is hoped that it will provide the best thought on the subject and the combined opinion of the best qualified pharmacists in the United States—thus making a Model Pharmacy Law which will be thoroughly representative.

RUDOLPH A. KUEVER,
The Secretary of the Section.

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A CORRECTION.

The motion and the remarks, on p. 1498 of the November number, in relation to the recommendation that a special committee be appointed upon the subject of standardizing pharmaceutical degrees, were erroneously attributed by the stenographer, to Mr. Henry M. Gordin. They should have been ascribed to Professor C. B. Jordan of Purdue University of Lafayette, Indiana.

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PANAMA-PACIFIC EXPOSITION NOTES.

Norway broke ground for a Norwegian pavilion on the grounds of the Panama-Pacific International Exposition on October 31. Other nations have used silver and gold spades in the formal ground breaking, but Norway used two shovels of special significance, having a part in Viking romance. One is an ice shovel of the "paddle" type, made of wood from the ship *Victoria*, of the Sir John Ross Arctic expedition. The wood is held together by thongs and the blade is tipped with whalebone. Walrus tusks form a part of the handhold. The other shovel is one brought through the Golden Gate by Capt. Roald Amundsen, discoverer of the Northwest Passage and the South Pole. It was a part of the equipment of the *Gjoa*, which now rests in Golden Gate Park.

The State buildings now under construction on the grounds of the Panama-Pacific International Exposition represent a cost of $1,200,000. The cost represented by the foreign pavilions in course of construction is $1,000,000. These figures are exclusive of the cost of interior fittings and furnishings, landscape gardening, installing of exhibits, and maintenance. The States most recently taking steps to construct buildings are Alabama and Nebraska. The most recent nation starting a pavilion is Switzerland.

Capt. Asher Carter Baker, U. S. Navy (retired), director of exhibits of the Panama-Pacific International Exposition, has left San Francisco for Europe, where he goes as a special commissioner of the exposition to assist European exhibitors in the final preparation of 1915 exhibits for shipment and display. No nation has changed exhibit plans because of the war.

Word has been received from Germany by officials of the Panama-Pacific International Exposition that German exhibitors are preparing exhibits for the 1915 exposition in spite of the war. With the exception of a few manufacturers near the border, there have been no withdrawals on the part of German merchants. German architects are in San Francisco at this time constructing the German sections for the nation's exhibits. Germany has established a New York office for exposition activities. One of Germany's most striking exhibits will be the Leichner Fountain, which will be shown in America for the first time. It is more than 100 feet high and appears as a great flame, yet the hand can be run through it as safely as through water.

It is announced that the Canadian Pacific Railway, which has its headquarters in Calgary, and which decided, on the breaking out of the war, to abandon an exhibit of some pretentions at the Panama-Pacific exposition, has now determined to make an exhibit along the lines originally planned.

A very large proportion of the specimens, especially the exhibits representing Alberta, have been collected. These include grains and grasses of every description that grow in the west. The north country, with its varied and wonderful animal life, will contribute its quota, while the minerals will come from British Columbia.

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NECROLOGY.

James E. Cooper, aged 44 years, in Lexington, Ky., on Saturday, September 5, 1914. He became a member of the American Pharmaceutical Association in 1907.

William H. Lacey, aged 65 years, in Philadelphia, Pa., on Wednesday, September 30,

1914. He became a member of the American Pharmaceutical Association in 1907.

Gustavus Alexander Knabe, in Montgomery, Ala., on October 5, 1914. He was a life member of the American Pharmaceutical Association, joining in 1876. J. W. E.

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Letters to the Editor

Mason G. Beebe, the Secretary of the Board of Pharmacy of Vermont, states that Dr. D. A. Bisbee, who sold the Wood Alcohol from the use of which, as a beverage, thirteen deaths have resulted, is not a registered pharmacist of that state and that he was not conducting a drug-store recognized as such, by the State of Vermont at the time of the sale of the poisonous liquor. Bisbee is a graduate of a medical college, but his license as a pharmacist, which he secured by registration when the Pharmacy Law was passed, had been previously revoked by the Board of Pharmacy, and at the time of the sale he was conducting a store for the sale of general merchandise, among which were a few patent medicines.

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Little Rock, Ark., Nov. 24, 1914.

Editor Journal A. Ph. A., Columbus, Ohio.

I wish to congratulate you on the superb November issue of the Journal.

Every paper you admitted to the pages is a gem! I think I can see dear old chum Hynson when he read his "All Fool's Day, etc." How scientifically he punctures the conceit of *some* "d-d Doctors," as he meanders along! Big-hearted old fellow "his bark is worse than his bite."

But must I acknowledge it? The pictures first of all, claimed my loving attention. Just look at Remington in the front! Well is he placed. Next to his cordial smile and handgrasp, which I had to miss at Detroit, comes the delight of looking at his masterful but still modest countenance.

Am I wrong in detecting some little "falling away" of his once luxuriant locks? It seems to me he is following the fashion set by Whelpley, my *enemy* in 1861-5, but *friend* ever since! If he was not in the Union army *bodily* he was in *Spirit*.

Then look at Arny and Wulling! They both want to talk. West reminds me of Boston where I was treated so royally that I thought I was a sure enough Yankee!

I am so glad you found space for those lovely faces of some grand women! I sometimes imagine that Mrs. Godding showed me *particular* attention at the Boston meeting, but in my cooler moments I recall that she showered smiles and kind words to every stranger she met. She was a help-mate to John G. Godding in every sense of the word. Mrs. Culley's face proves that there are good-looking women out in Salt Lake! "Howdy, Mrs. Whelpley," may you live forever.

Were I to mention the names of my dearly beloved personal friends, printed in your Journal, you would surely bar out this effusion. If you print it, however, allow me to recognize Mayo, Mason, England, Beringer, Payne, Anderson, Day, Apple, Ruddiman, Wilbert, R. H. Walker, the rough diamond of Texas, Lemberger, Eberle, Diehl, Wallace of Pennsylvania, the state from which I "escaped" in 1840 when at the early age of four years!! However, I must close these reminiscences because your space is rather valuable.

John B. Bond, Sr.

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FORNEY, TEXAS, Nov, 20th, 1914.

The Editor, Journal of the American Ph. Assn., Columbus, Ohio.

My Dear Sir:—On the first page of the Journal of the November issue in a biographical sketch of Prof. Joseph P. Remington, in recounting the different societies and associations of which he is an honorary member, I regret to have to be compelled to call your attention to the fact that you omitted his being an honorary life member of the Texas Pharmaceutical Association. On page 127, Proceedings of 1910, you will find "Upon motion of Secy. Eberle, Prof. Remington was unanimously elected an honorary life member of the Texas Pharmaceutical Association."

I realize that the honor Texas would do to Dr. Remington, is really an honor to Texas, rather than to the doctor. We are proud to have great men as members of our association, but when a man is both great and good we are particularly interested in his being counted as one of our number—and Dr. Remington is both great and good.

With best wishes I am,

Walter D. Adams,
President.

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The Pharmacist and the Law

LICENSES—RECIPROCAL REGISTRATION—REGULATION BY BOARD OF PHARMACY.

Under Kentucky Acts 1910, c. 113, the State Board of Pharmacy is authorized to exchange certificates of registration with other states, under such rules as the board shall determine. The board adopted a rule that

applicants must have been registered in the state from which they apply at least one year before reciprocal registration is granted. In mandamus against the board to compel them to grant the petitioner a pharmacist's certificate, it appeared that his application had been denied, because he had not been registered in Georgia, the state from which he applied, for one year. He subsequently, on the elapse of the required year, made another application. Meanwhile the board had passed an additional rule, requiring that the applicant should have, for one year prior to examination, been a bona fide resident of, and been engaged in the drug business in the foreign state. As the petitioner had not been an actual resident of Georgia for one year prior to his registration in that state, his application was again denied. He claimed that the board's rules destroyed the right of reciprocal registration. The court did not concur in this. It said that, apparently, persons living in Kentucky, who were unwilling to stand the Kentucky examination, went to other states where they did not reside to get certificates, and then presented these certificates for reciprocal registration to avoid standing the Kentucky examination. But for the rule of the board, a person who had failed in the Kentucky examination might immediately go to another state, obtain a certificate, and return to Kentucky, and as a matter of right, have a certificate issued to him by the Kentucky board. The rule was held to be not arbitrary, but reasonable. The petitioner's constitutional rights had not been violated. The rule did not discriminate against the citizens of another state. It was neither harsh nor unwarranted. The petitioner was a citizen of Kentucky. The purpose of the rule was to prevent citizens of Kentucky from evading the statute of that state requiring them to pass an examination, in order to obtain a certificate as a pharmacist. Mandamus was refused.

King v. Kentucky Board of Pharmacy, Kentucky Court of Appeals, 169 S. W., 600, decided October 6, 1914.

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INTOXICATING LIQUORS—SEARCHES AND SEIZURES.

In an action of trover against a sheriff and his deputies, it appeared that the plaintiff was a registered druggist and pharmacist in a village in Michigan. He had given no bond for the sale of liquor as a druggist on May 1, 1911, and did not give such bond until July of that year. On May 19, 1911, at an early hour in the morning, the defendants, holding a search and seizure warrant, made a search of the plaintiff's premises, and seized and took away liquors of the claimed value of $284.

Michigan Pub. Acts, 1909, No. 107, Section 27, provides that if any person makes a sworn complaint or affidavit before a magistrate, that he has cause to believe, and does believe, that liquors are being manufactured, sold, furnished, or given away as a beverage, or kept for the purpose of being sold, etc., the magistrate shall issue his warrant to an officer, commanding him to search the premises designated, and, if such liquors are found, to seize them. Section 29 provides that no warrant shall be issued, until there has been filed an affidavit describing the house or place to be searched, the things to be searched for, and alleging substantially the offense in relation thereto, and that the affiant believes, and has good cause to believe, that such liquor is there concealed. In the present case, the affidavit merely alleged that the affiant believed that liquor was being sold, furnished and given away and kept for that purpose in the plaintiff's drug store, but did not allege that he believed and had good cause to believe that such liquor was there concealed. It was held that the affidavit was fatally defective, and did not give the magistrate jurisdiction to issue a warrant, and that the warrant issued was no justification to the officer for the seizure of liquor found on the plaintiff's premises.

Bullock v. Ward, Michigan Supreme Court, 148 N. W., 651, decided October 2, 1914.

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UNFAIR COMPETITION—"SECONDARY TRADE NAMES."

Suit in equity was brought in the Oklahoma Federal district court, to enjoin the defendants from an infringement of the plaintiff's trade name, and to prevent unfair competition. It was held that there was no evidence tending to show that the defendants had been guilty of the use of the plaintiff's trade name. The facts with regard to the allegation of unfair competition, as stated by the court, are as follows: The trade name of the plaintiff's product is "Coca-Cola." The defendants prepared and sold a beverage which is called "Koke." Both beverages are made from syrups mixed with carbonated

water. Both are put up in bottles, and are served by the glass at cold drink stands. The bottles containing "Koke" are a little taller than those containing "Coca-Cola." The bottles containing each beverage have a tin cap over the stopper. The words "Coca-Cola" and "Koke" appear in script on these tin caps. "Coca-Cola" and "Koke" are similar in color. The defendants sold to dealers exclusively. It appeared, in testimony, that, in some instances, persons who wanted Coca-Cola would say, "Give me a dope," or "Give me a Koke." There was also proof to the effect that two or three dealers in Tulsa, Okla., gave "Koke" to their customers when they had called for "Coca-Cola." There was no proof that the defendants sold "Koke" for "Coca-Cola," or advised their customers to do so. In that respect this case differs from the case of Coca-Cola Co. v. Gay-Ola Co., 200 Fed., 720. In that case, the defendant claimed to have discovered the complainant's formula, and to be in fact making the same thing. There the Court of Appeals for the Sixth Circuit held that a case of unfair competition had been made out, in that the defendant sold its product "as and for Coca-Cola." Nothing appeared in the testimony, in the present case, connecting the defendants with any effort to sell their product for Coca-Cola. There was nothing to show that they had such intention. In the case of Coats v. Merrick Thread Co., 149 U. S., 562, where unfair competition in the manufacture and sale of thread was charged, the court said: "We think the defendants have clearly disproved any intention on their part to mislead the dealers who purchase of them. Indeed, such dealers could not possibly fail to know what they were buying, and the fraud, if any, was practiced on the buyer of a single or a small number of spools, who might be induced to purchase the thread of the defendants for that of the plaintiffs. If the purchaser of such thread desires a particular make, he should either call for such, in which case the dealer, if he puts off on him a different make, would be guilty of fraud, for which the defendants would not be responsible, or should examine himself the lettering upon the spools." Although it appeared in testimony, that it was the custom of dealers, in serving the two beverages, to remove the tin caps from the bottles, so that the purchaser did not see the name thereon, that would be true as to any beverage of like or similar color to Coca-Cola. According to the testimony of the plaintiff's agent, there are 181 beverages having practically the same color as Coca-Cola. The defendants, it was held, could not be held responsible for what their customers did without aid, suggestion, or inducement from them.

The plaintiff also argued that "Koke" had become the "secondary name" of its product, because it appeared from the proof that some persons desiring that product say to the dealer, "Give me a Koke." A trade-name may be acquired by adoption or use. But the plaintiff had never used the word "Koke" in connection with its product. It has taken and used the name of "Coca-Cola." The use of the word "Koke," as applied to the product of the plaintiff, had been, so far as the testimony showed, by persons upon their own volition without being moved thereto by the defendants. If the use of the name had been observed by the defendants, and it was afterwards adopted by them with the purpose and intention of taking advantage of that fact and to engage in the manufacture and sale of a beverage and call it "Koke," and sell it "as and for Coca-Cola," then a case of unfair competition would undoubtedly be made out.

Assuming that there is such a thing as a secondary trade-name, the right to its exclusive use must depend upon adoption and use, just as in the case of a primary name. There is such a thing as a name having acquired a secondary meaning. But it was held that the facts in this case did not call for an application of that rule. The relief sought here, was the prohibition of the use of a name that the defendants had neither adopted nor used. There was nothing to show that the defendants were using the name for the purpose of selling the beverage manufactured by them for Coca-Cola. The plaintiff's bill was therefore dismissed.

Coca-Cola Co. v. Branham, 216 Fed., 264, decided July 15, 1914.

Council Business

COUNCIL LETTER No. 6.

Philadelphia, Pa., November 12, 1914.

To the Members of the Council:—

Motion No. 10 (*Election of Members; Applications Nos.* 31 *to* 36, *inclusive*) has received a majority of affirmative votes.

In connection with the subject of time of holding the sixty-third annual meeting of the American Pharmaceutical Association and the suggestion that it be held either before or immediately after the time set for the annual meeting of the A. M. A., in June, 1915, Local Secretary *Pro-tem.* Schneider opposes the suggestion on the ground that the colleges of pharmacy do not close early enough to allow some of the most active members of the Association to leave for San Francisco.

Frank H. Freericks writes as follows:

"I am just in receipt of Council Letter No. 5, and note that Mr. Wilbert requests consideration for the holding of our Annual Convention some time in June, either immediately before or immediately after the meeting of the A. M. A. Of course, it would be most desirable to arrange for the respective conventions at about the same time, especially since otherwise it may interfere with the attendance at our convention of some of our most valued members. However, I cannot help but point out, that the holding of the convention at that time in June will conflict with the dates set for a great many State Association meetings, most of which take place late in June and early in July. As Chairman of the Section on Education and Legislation, I would say, also, that the Section has mapped out an elaborate plan for the drafting of "A Modern Pharmacy Law," with the support and co-operation of State Boards of Pharmacy and of State Pharmaceutical Associations. It is a feature of this plan to have the drafting of such a modern law discussed at the annual meeting of all of the State Associations, and then to have it finally agreed to and final changes made at the sessions of the Section on Education and Legislation. This will work-out well, if the convention is held during the middle or the latter part of August, but it will not be possible if the convention is held in June. Of course, you will please understand that the Section on Education and Legislation does not desire in any manner to interfere with the most suitable date for holding the convention, even if this should prevent altogether the carrying-out of its tentative program. However, I believe it but right that the Council should be made acquainted with the facts herein stated."

General Secretary Day writes:

"I have Council Letter No. 5. I presume that the matter of fixing the date for the Sixty-third annual meeting at San Francisco is now up for discussion. I would call attention to a serious disadvantage in holding our meeting in June and that is, that we would certainly conflict with the meetings of many of the state pharmaceutical associations. Nearly all of the state associations meet in June. There would not be so much conflict if we held our meeting immediately following the A. M. A. meeting, say the week beginning June 28th, but I would think that the date suggested by the local committee, August 9th to 14th, is to be preferred.

The suggestion of the local committee to so arrange the program that the business meetings would not interfere with the entertainments conveys a subtle irony and raises the question of whether we are going to San Francisco chiefly to be entertained. As the Sage of East Aurora has remarked, "If cigarette-smoking interferes with your business cut out the business," but, seriously speaking, I believe that the entertainments are a great attraction and will be so especially at the coming meeting, but it will be difficult enough to hold our members of the sessions when there is so much to be seen at the Exposition. If the method of handling simultaneous sessions can be developed so successfully as it was at the recent Detroit meeting, perhaps it may be possible to condense our business sessions within five days or even within four so as to allow more time for the entertainments. To make entertainment the prime feature, however, I believe would be a serious mistake."

No further comments have been received and the vote will now be taken on the recommendation of the Local Committee in Council Letter No. 5, that the time of holding the sixty-third annual meeting of the American Pharmaceutical Association be set for the *week of August 9th to 14th, 1915, inclusive.*

Do you favor the above recommendation? It will be regarded as *Motion No.* 11, (*Time of Holding Sixty-third Annual Meeting of the American Pharmaceutical Association, i. e., week of August 9 to 14, inclusive*).

Local Secretary *Pro-tem.* Schneider writes as follows:

"I am enclosing a copy of a letter from the Secretary of the Canadian Pharmaceutical Association which should receive immediate attention. In order to save time I move that the American Pharmaceutical Association extend a hearty invitation to the Canadian Pharmaceutical Association to meet in San Francisco in 1915 about the same time as the time to be fixed for the meeting of the A. Ph. A."

Canadian Pharmaceutical Association,
Office of the Secretary,
Toronto, Oct. 20, 1914.

Mr. J. A. Barr,
Panama-Pacific Exposition,
San Francisco.

Dear Sir:—I have your letter of the 14th re. the 1915 convention of the Canadian Pharmaceutical Association.

The convention of the Association which was called for Winnipeg this year was postponed on account of war conditions and of course this leaves the place of meeting for 1915 wide open.

The general feeling is that Winnipeg will be the point of assembly but the matter will have to come before the Executive for decion the 23rd of the month. I will immediately

sion and, as yet, nothing has been done. When a decision is arrived at, will communicate with you.

Yours sincerely,
G. E. GIBBARD, Secretary.

Motion No. 12 (*Invitation to Canadian Pharmaceutical Association*). Moved by Albert Schneider, seconded by Dr. F. E. Stewart, that the American Pharmaceutical Association extend a hearty invitation to the Canadian Pharmaceutical Association to meet in San Francisco in 1915 at about the same time as that fixed for the meeting of the American Pharmaceutical Association.

The following communication, addressed to the Secretary of the Council, has been received from Charles A. Rogers, of Morgantown, W. Va.:

"I have your esteemed favor of the 4th inst. notifying me of the favorable action of the Council regarding our petition. I, in turn, will take great pleasure in reporting the same to the pharmacists of the state. I note that the Branch is called the Morgantown, W. Va. Branch of the A. Ph. A. I might suggest that it would be advisable to have the nomenclature changed to the West Virginia Branch, etc. This would not convey the idea that it is a localized affair and would facilitate the work of getting pharmacists throughout the state interested. As soon as I am positive that my list of members is correct, I will inform you regarding the number. At the present time I feel sure that we will have twenty-five members. We will act accordingly with regard to the member of the Council. We hope to hold our initial meeting on the evening of November 19th."

Do you favor the change of title of Morgantown, W. Va. Branch, A. Ph. A., to West Virginia Branch, A. Ph. A., as requested above? This motion will be regarded as *Motion No.* 13 (*Change of Title of Morgantown, W. Va. Branch, A. Ph. A. to West Virginia Branch, A. Ph. A.*)

General Secretary Day writes:

"The expenses of the stenographic report for the Detroit meeting were $379.18. We had originally appropriated in our 1914 budget, $250.00, but there was a balance due on reporting the Nashville meeting of $100.00, which has since been paid, also a small item for the House of Delegates of $1.50. We now need $230.68 to cover the expenses of the stenographic report of the last meeting. The Finance Committee has approved of this proposed addition to the budget.

Motion No. 14 (*Appropriation of* $230.68 *for Stenographic Services*). Moved by W. B. Day, seconded by J. A. Koch, that an additional appropriation of $230.68 be made for stenographic services for the Detroit meeting.

J. W. ENGLAND,
Secretary of the Council.

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COUNCIL LETTER No. 7.

Philadelphia, Pa., November 24, 1914.

To the Members of the Council:—

Motion No. 11 (*Time of Holding the Sixty-third Annual Meeting of the American Pharmaceutical Association, i. e., the week of August* 9 *to* 14, *inclusive*), *No.* 12 (*Invitation to Canadian Pharmaceutical Association*), *No.* 13 (*Change of Title of Morgantown, W. Va. Branch, A. Ph. A., to West Virginia Branch, A. Ph. A.*), and *No.* 14 (*Appropriation of* $230.68 *for Stenographic Services*), have each received a majority of affirmative votes.

Dr. H. M. Whelpley writes as follows:

"*Entertainment at the* 1915 *Meeting.* I have read with much interest the suggestion that the real work of the A. Ph. A. at the 1915 meeting be so arranged that it will not interfere with the ambition and good intentions of the local Committee of Arrangements, in charge of the entertainments. Our meeting at Detroit was one of the most enjoyable in the long series of A. Ph. A. conventions. It was also a meeting for real work. What may be termed the 'business' of the association was given first consideration, as I feel it should be every year. If we are going to San Francisco merely for entertainment, I believe it would be better to hold an A. Ph. A. meeting in some central location and then go on to the Pacific Coast for our entertainment. The A. Ph. A. meetings are generally held with a view of increasing the local interest in the association. I hope the recently formed San Francisco Branch will make a good showing. We need more members on the Pacific Coast, more papers from them for the different sections and larger delegations at the annual meetings. The San Francisco Branch has the opportunity of accomplishing much good work in this direction."

At the fourth general session of the recent annual Convention held at Detroit, the "Committee on the Recommendations of the Retiring General Secretary and Editor" (Journal A. Ph. A., Nov., 1914, 1503), recommended the following:

"Your committee in conclusion recommends that, in testimony of the unusually valuable services of the former General Secretary and Editor, James H. Beal, that an honorarium of $1000 be presented to him with the grateful thanks of the Association, and

with the expression of the hope that many years of usefulness be vouchsafed to him."

The recommendation was referred to the Council for consideration.

Dr. Beal was not present at the meeting and it was not known whether an honorarium would be acceptable to him or not, and there was no one present to speak for him Hence, the Council-reference.

The Secretary of the Council wrote Dr Beal as to his wishes in the matter and the following reply has been received:

"While I am grateful to those who thought of voting me an honorarium, I feel that a precedent of this sort should not be set. If such an honorarium should be voted me by the Council, I would expect to immediately turn it over to the Endowment Fund."

The term of Thomas F. Main, of New York, as a member of the Commission on Proprietary Medicines, has expired, and he is nominated to succeed himself by C. A. Mayo, seconded by J. W. England.

Do you favor his re-election? This will be known as *Motion No.* 15 (*Election of Thomas F. Main as a member of the Commission on Proprietary Medicines for term expiring* 1919).

It is the business of the Council to annually designate the member of the Commission on Proprietary Medicines who shall act as Chairman. In 1914, Dr. James H. Beal acted as Chairman. Do you favor his reappointment? This will be known as *Motion No.* 16 (*Appointment of Dr. James H. Beal as Chairman of Commission on Proprietary Medicines*).

Albert Schneider, Local Secretary *pro-tem.* writes (November 18, 1914) that:

"I have just written a letter to Dr. W. N Nagai, President of the Pharmaceutical Society of Japan urging the Society to meet in San Francisco in 1915. I hereby move that The American Pharmaceutical Association extend a hearty invitation to the Pharmaceutical Society of Japan (Nippon Yakugakkwai) to meet in San Francisco in 1915 at the same time as the A. Ph. A. Dr. Nagai's address is No. 8, Shino-miyabicho, Ushigomeku, Tokyo, Japan.

The Local Committee will have a meeting write you of any recommendations and actions taken. I will lay your communications before the committee.

I may inform you that the work at the Exposition is well ahead of the schedule time. I may also state that the Exposition will prove a wonderful revelation to all visitors.

I greatly fear that the A. Ph. A. Exhibit plan will have to be abandoned. If anything is to be done it must be done *at once*. The San Francisco Branch of the A. Ph. A. at the meeting of November 10, were in favor of the proposed exhibit but were in doubts as to the source of the funds necessary to put the proposition into execution."

Do you favor extension of invitation to Pharmaceutical Society of Japan to meet in San Francisco in 1915 at the same time as the A. Ph. A., as moved by Albert Schneider? This will be known as *Motion No.* 17 (*Invitation to Pharmaceutical Society of Japan*).

Motion No. 18 (*Election of Members*). You are requested to vote on the following applications for membership:

No. 37. Frances Edith Hindman, University of Washington, College of Pharmacy, Seattle, Wash., rec. by C. W. Johnson and Forest J. Goodrich.

No. 38. Thomas J. Casey, 227 High Street, Morgantown, W. Va., rec. by Charles H. Rogers and J. H. Beal.

No. 39. Amos Jones, 543 E. Thompson St., Philadelphia, Pa., rec. by Quintus Hoch and George M. Beringer.

No. 40. Ernest Franklin Trolinger, 1410 Forrest Ave., Nashville, Tenn., rec. by E. A. Ruddiman and J. T. McGill.

No. 41. Mrs. Maria Gonzalez Llarena, Jesus del Monte 518, Havana, Cuba, rec. by W. B. Day and J. W. England.

No. 42. Eugene A. McLadden, Cor. Main and Mercer Sts., Hackensack, N. J., rec. by George M. Beringer and G. M. Beringer, Jr.

No. 43. Joseph J. Easley, Hastings, Pa., rec. by Charles H. Rogers and Wm. H. Moore.

No. 44. A. T. Davis, Warren, Ark, rec. by W. R. Appleton and A. L. Morgan

No 45. Cyrus Jacob Fuhrman, Coquille, Oregon, rec. by M. E. Everitt and J. Lee Brown.

No. 46. Charles B. Clark, P. O. Box 387, Atchison, Kansas, rec. by M. Noll and L. D. Havenhill.

No. 47. Charles C. Orr, 541 E. 112th St., Chicago, Ill., rec. by W. B. Day and E. N. Gathercoal.

No. 48. Joseph Trienens, 819 Buena Ave., Chicago, Ill., rec. by William Gray and William B. Day.

No. 49. John Smith Donnet, 1225 Hull St., Baltimore, Md., rec. by H. A. B. Dunning and O. W. Muehlhause.

No. 50. Andrew Grover DuMez, University of the Philippines, Manila, P. I., rec. by Edward Kremers and Emerson R. Miller.

No. 51. Campbell A. Neptune, 600 Market St., Parkersburg, W. Va., rec. by Charles H. Rogers and W. A. Ream.

J. W. ENGLAND,
Secretary of the Council.

415 N. Thirty-third Street.

COUNCIL LETTER No. 8

Philadelphia, Pa., December 1, 1914.

To the Members of the Council:—

Motions No. 15 (*Election of Thomas F. Main as member of Commission on Proprietary Medicines for term expiring* 1919), *No.* 16 (*Appointment of Dr. James H. Beal as Chairman of Commission on Proprietary Medicines*) *and No.* 18 (*Election of Members; Applications from Nos.* 37 *to* 51 *inclusive*), have each received a majority of affirmative votes.

With reference to *Motion No.* 17 (*Extension of Invitation to Pharmaceutical Society of Japan to meet in San Francisco in* 1915 *at the same time as the A. Ph. A. meeting*), the following communication has been received from William C. Alpers:—

"The motion to invite the Pharmaceutical Association of Japan to meet with us appears to me odd and untimely. What is the cause of such a move? I cannot understand it. To receive an invitation from The American Pharmaceutical Association is certainly an honor, the highest probably that American pharmacy can extend. Why offer this honor to the Japanese with whom we have so little in common and who for various reasons are objectionable to many of us?

If we are to engage in international courtesies why not invite the nations that are related to us in blood, science and civilization? Why not invite the English, French, German, Italian pharmaceutical associations? I can find no motive whatsoever why we should invite men whose language we do not understand, whose habits and manners are different from ours and with whom many of us and our ladies would not wish to associate socially."

If any members of the Council who have voted wish to change their vote on Motion No. 17, they can do so.

J. W. ENGLAND,
Secretary of the Council.

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COUNCIL LETTER No. 9.

To the Members of the Council:—

Further comments have been received upon *Motion No.* 17 (*Extension of Invitation to Pharmaceutical Society of Japan to meet in San Francisco in* 1915 *at the same time as the A. Ph. A. meeting*), as follows:—

Frederick J. Wulling writes:—

"Concerning Motion No. 17—Invitation to Pharmaceutical Society of Japan; I would say that in matters like this we should go slowly and with deliberation. To extend an invitation implies the assumption of all responsibilities that devolve upon hosts. I do not know what would be expected of the A. Ph. A., if it invited a foreign pharmaceutical body. No doubt we would have to live up to the customs prevailing in the country to whose association we issue the invitation. On the whole, I feel that we give too little consideration to most of our transactions. A matter of such significance as an invitation to a foreign body to meet with us should have the fullest kind of thought by a competent committee and such a committee should have sufficient time to enable it to make its report and possibly recommendations authoritative. While I would be more than delighted to greet our Japanese colleagues within our own territory, I yet would urge that we think the matter of an invitation over very carefully.

Of course it should be noted that the letter written by Dr. Schneider to the President of the Pharmaceutical Society of Japan was an individual letter not binding upon the A. Ph. A. in any wise. I feel very strongly that we should not vote upon Motion 17 without further consideration."

Dr. Francis E. Stewart writes:—

"Regarding the motion to invite the Pharmaceutical Society of Japan to the meeting in San Francisco in 1915 at the same time as the A. Ph. A. meeting, I voted in the affirmative, but since the matter is still open for consideration, I wish to reconsider and vote against it.

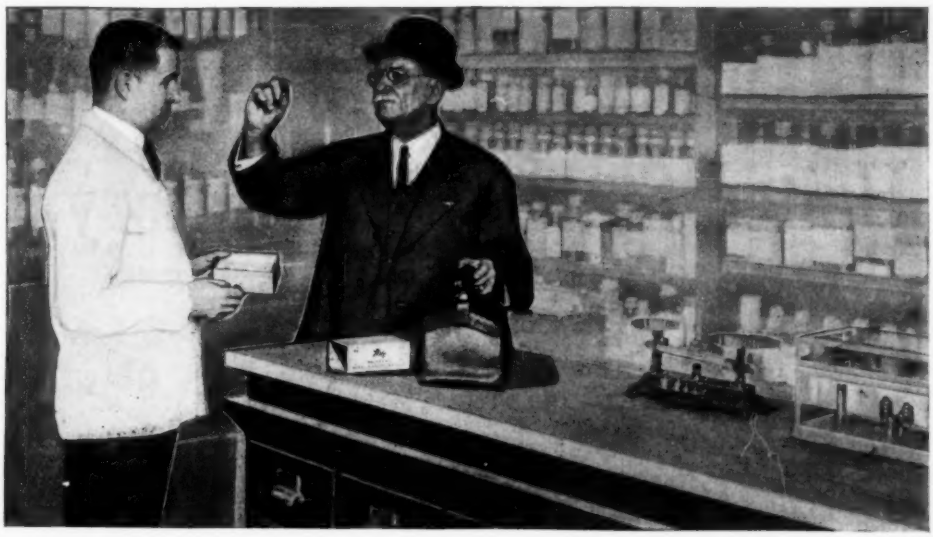
My reasons for so doing are not the same as those of Mr. William C. Alpers, for I have no objection whatever to cultivating international friendship and good will between all of the nations of Europe, whether related to us in blood, science or civilization or not; but it would seem to me that an invitation of the kind at the present time would be a breach in the neutrality which the United States is maintaining toward the warring factions in various parts of the world, unless we include in our invitation on equal terms the pharmaceutical associations of all of the nations now at war."

George H. Schafer writes:—

"Propinquity of Japan and time was probably the cause for Mr. Schneider's motion No. 17. As I may have erred in voting yes on such motion, I would favor its reconsideration and amendment to meet the well-taken objections of William C. Alpers. If in order, will move its reconsideration or will second such motion if made by others."

No motion for a reconsideration of Motion No. 17 is necessary at this time, as no vote on the motion has been announced. The subject is still before the Council for consideration and members may change their votes, or table the motion, or substitute it by another motion. Members are asked to express their opinions on the subject.

J. W. ENGLAND,
Secretary of the Council.



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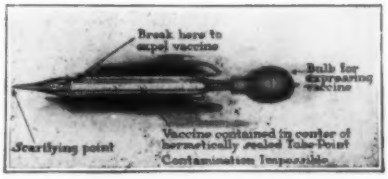
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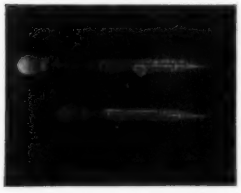

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